

Cross-Examining a Corporate Valuation Expert

Dr. Israel Shaked, Moderator

The Michel-Shaked Group/Boston University | Boston

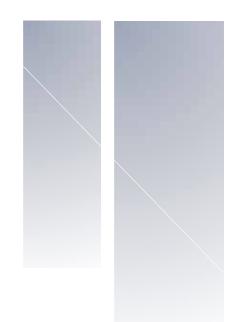
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Cross Examining a Valuation Expert



Professor Emeritus Israel Shaked

The Michel-Shaked Group & Boston University

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Assist businesses with turnarounds, financial reporting, forensic accounting, valuation, executive compensation and employee training

EXPERT TESTIMONY

Provide law firms economic and financial analysis, valuations, discovery assistance,

forensic investigations, modeling, report

preparation, and oral testimony

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Dr. Israel Shaked – Biography

- □ Dr. Shaked is a Professor of Finance and Economics at Boston University's Questrom School of Business and the Managing Director of The Michel-Shaked Group. For over 41 years, he has taught courses at the doctoral, graduate and undergraduate levels on various topics, including business valuation, corporate finance, financial institutions and markets, and financial economics.
- For over three decades, Dr. Shaked has been retained as an expert or consultant in numerous cases involving valuation, securities, M&A, bankruptcy, tax, damages and other commercial litigation matters.
- Dr. Shaked has a Doctor of Business Administration (DBA) from the Harvard Graduate School of Business Administration. In addition, he has an MBA with a concentration in Finance, a BA in Economics, and a BA in Statistics from the Hebrew University of Jerusalem.



2

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
3Com/U.S. Robotics	Computer Networks
Aavid Thermal Technologies	Thermal Management
Adelphia Communications	Communications and Cable
Advantage Payroll Services	Payroll Services
Advest Asset Management	Asset Management
Air Transport International	Transportation
Airgate Inc.	Telecommunications
Airvana	Telecommunications
Albany International	Machinery Fabrics
Allegheny Health Education and Research Found.	Healthcare
Alliance Leasing	Financial Services
American Chain Link Fence	Chain Link Fences
American International Group	Financial Services/Insurance
American Power Conversion	Electronic Instruments
Annidis Corporation	Medical Imaging System
Apollo Real Estate Management	Real Estate
Atlantic Richfield	Oil and Gas
Au Bon Pain	Restaurant
Baan Company N.V.	Enterprise Management
Bank of America Corp.	Money Center Bank
Bank Julius Baer	Banking
Beekman	Real Estate Development

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Company	Industry
Belle Casinos	Casino
Bennett Funding Group	Financial Services
Bentley Financial	Financial Services
Berdon LLP	Accounting
Bidsdirect.com	Online Auction
Bike Athletic	Recreational Products
BNP Paribas	Banking
Boston Chicken	Food & Beverage
Boston Communications Group	Telecommunications
Boston Partners Asset Management	Asset Management
Broadcom	Semiconductors
Brown Brothers Harriman	Investment Banking & Advisory
Builder's Square	Home Improvement
Caesars Entertainment	Casino
Caldor Corporation	Retail
Cambridge Electric	Electric Utility
Cambridge Technology Partners	Computer Networks
Carleton Woolen Mills	Textiles
Cascade International	Retail – Clothing
Check Point Software Technologies	Software/Security
Chevron	Oil and Gas
Chicago Cubs Holding	Sports Franchise/Baseball



4

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
China North East Petroleum	Oil Exploration/Production
Chiron	Pharmaceuticals
CITGO	Oil and Gas
Club Med	Personal Leisure
Coastal States Crude Gathering	Oil and Gas
Cogent Capital Management	Investment Management
Commercial Chemical Corporation	Holding Company
Congoleum	Flooring
Corvis	Computer Networks
Credit Technologies	Service to Wireless Firms
Cumberland Farms, Inc.	Retail – Convenience
Curacao Utilities Company Venezuela	Electric Utility
Dade Behring Holdings, Inc.	Healthcare
Dairy Mart Convenience Stores	Retail – Convenience
Dataware Technologies Inc.	Software and Programming
Delta Airlines	Airlines
Dictaphone	Speech Recognition
Diet Center, Inc.	Weight Management
Digital Equipment	Computers
Dragon Systems	Speech Recognition
DuPage County Regulatory Commission	Government
Duro Industries	Textiles



Company	Industry
Dynamics Research Corp.	Computer Networks
Eaton	Industrial Conglomerate
Ellman Holdings, Inc.	Medical Supplies
Enron Corp.	Energy Services
Enstar Group	Child Care/Insurance
Enterprise Capital Management	Asset Management
Espirit Energy Trust	Oil and Gas Operations
Exxon	Oil and Gas
Filtronic Comtek PLC	Electronic Instruments
Finagle-A-Bagel	Restaurant
First Executive Life Insurance	Insurance
Flintkote	Building Materials/Asbestos Claims
Florida Engineered Construction Projects	Cement Products
The Fortress Corporation	Storage
FoxMeyer	Pharmaceutical Distribution
Fundamental Portfolio Advisors	Financial Services
Gilbane, Inc.	Real Estate Management and Construction
Gillette (Rembrandt)	Consumer Products
Goldman Sachs & Co.	Financial Services
Grand Bahama Power	Electric Utility
Greater Houston Physicians Medical Association	Healthcare
Gruntal & Co.	Asset Management



6

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
GTE	Telecommunications
Habas Group	Real Estate
Halliburton Company	Energy Services
The Hartford Insurance Group	Insurance
Hayes Lemmerz International	Auto & Truck
Hechinger Company	Home Improvement
High Voltage Engineering	Electronic Instruments
Home Insurance	Insurance
Honeywell	Controls and Aerospace
Iberdrola	Energy
Illinois Tool Works	Diversified Machinery
Innoveda, Inc.	Software and Programming
Instron Corporation	Measurement Instruments
Interland (n/k/a Web.Com)	Internet Services
Interpublic Group of Companies, Inc.	Public Relations/Advertising
InverWorld Holdings	Financial Services
iPCS, Inc.	Telecommunications
ПТ	Conglomerate
Janssen Pharmaceutica	Pharmaceuticals
Jones Truck Lines	Trucking
JPSCO (Jamaica)	Electric Utility
JWP	Water Utility & Engineering/Construction



Company	Industry
Kenner & Company	Private Equity Fund
Kinder Morgan	Energy Services
Kinko's	Copying
Kinross Gold Corporation	Basic Materials
Koor Chemicals	Chemical Conglomerate
Lady Luck Gaming	Casino
Laminate Kingdom (d/b/a Floors Today)	Flooring
Lancer Management	Hedge Fund
Lebenthal & Co.	Public Finance Activities
Lernout & Hauspie	Speech Recognition
Liberty Mutual	Insurance
Liggett Group	Tobacco
Lincoln North Partnership	Real Estate and Construction
Litchfield Securities Corporation	Holding Company
Litchfield Realty Company	Real Estate
Lockheed Martin	Aerospace and Defense
LOGAL Software, Inc.	Software
Los Angeles Metropolitan Transportation Authority	Government
The Lyme Timber Company	Real Estate
M4 Environmental	Environmental Services
Manufacturers and Traders Trusts	Banking
Mark Properties	Real Estate



8

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
Matrix Capital Markets	Merger & Acquisition Advisory
Mayer Group	Real Estate Consultants
McKessonHBOC, Inc.	Pharmaceuticals
Merry-Go-Round	Retail – Clothing
Metromedia International Group	Telecommunications
Metropolitan West Asset Management	Asset Management
MGM/UA Communications	Film/Studios
Micro Networks	Electronic Instruments
Mill Steel	Steel
Mirant	Energy Services
Mobil	Oil and Gas
The MONY Group	Insurance
Morse Tool	Tools
Mortgages Limited	Commercial & Residential Mortgages
Munford, Inc. (d/b/a Majik Market)	Retail – Convenience
National Power Corporation (Philippines)	Electric Utility
NetBank, Inc.	Internet Banking
NetFax, Incorporated	Internet Services
Norddeutsche Landesbank Girozentale	Investments
North Manchester Foundry	Iron and Steel
ON Technology	Software Programming
One Lincoln	Real Estate



Company	Industry
OneStar	Telecommunications
PacificCorp	Electric Utility
PaineWebber, Inc.	Financial Services
Panera Bread Company	Restaurant
Papa Gino's	Food & Beverage
Paracelsus Healthcare Corp.	Healthcare
Parisian	Retail - Clothing
Payless ShoeSource	Retail- Shoes
PETCO	Retail – Pet Care
PCD, Inc.	Electronic Instruments
PharMerica	Pharmaceutical Distribution
PictureTel	Communications Equipment
Pilgrim Asset Management	Investment Management
Piper Capital Management, Inc.	Financial
Plantex Pharmaceuticals	Pharmaceutical Drugs
Polaroid	Cameras and Film
Portland General Electric	Electric Utility
Power Generation Company (Trinidad)	Electric Utility
PRI Automation	Semiconductors
Quadrax	Basic Materials
Quigley	Asbestos Claims Processing
Rayonier Forest Products, Inc.	Timber



10

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
	Auto & Truck
Raytech Corporation	
Refco	Financial Services
Regional Transportation Authority	Government
Restrac, Inc.	Human Resources
Robertson Stephens, Inc.	Asset Management
Roche-Bobois (USA)	Retail – Furniture
Rouse Properties	Real Estate
Safety-Kleen	Environmental Services
Salomon Smith Barney	Finance & Insurance
Savoy Hotel Partners	Real Estate
The Shaw Group	Construction/Engineering
Shoebuy.com	Retail
Shopko	Retail
Sky TV	Television
Solar Cosmetic Labs	Cosmetics
Southwest Gas Corporation	Natural Gas
Sprint PCS	Telecommunications
Stillwater Mining	Mining
Stone & Webster	Construction/Engineering
Stop & Shop	Supermarkets
Sunset Station Hotel & Casino	Casino
Styling Technology Corporation	Personal & Household Products



Company	Industry
Summit Technology	Vision Technology
Symmes Hospital	Hospitals
Tambour	Paints
Texaco	Oil and Gas
Telecom Argentina	Telecommunications
Transition Systems	Healthcare Information
Tribune Media Company	Broadcast Management
Trident USA Health Services LLC	Healthcare Diagnostic Solutions
Twenty-First Century Fox	Media/TV/Cable
Tyco International	Security Solutions
UNIFI Communications	Telecommunications
United Companies Financial	Financial Services
Urdan Metal & Casting	Steel & Iron
U.S. Financial Life Companies	Asset Management
US Unwired	Telecommunications
US West (n/k/a Qwest)	Telecommunications
Vencor	Hospital Management
Ventas	Real Estate
Vetta Sports	Biking Accessories
Wieboldt Stores	Department Stores
Wilmington Trust	Financial Services
World Bazaar	Giftware



12

Dr. Israel Shaked Financial Analysis Experience

Company	Industry
WorldCom, Inc.	Telecommunications
World Travel	Travel/Cruise
Xerox State Healthcare LLC	Healthcare Management
Xpedior, Inc.	Computer Services
Xyvision, Inc.	Software Programming
Yukos Oil	Oil and Gas
Zenith Electronics	Consumer Electronics
Zilberbrand Group	Aircraft Futures
Zohar Funds	Financial Services
Zurich Insurance	Insurance



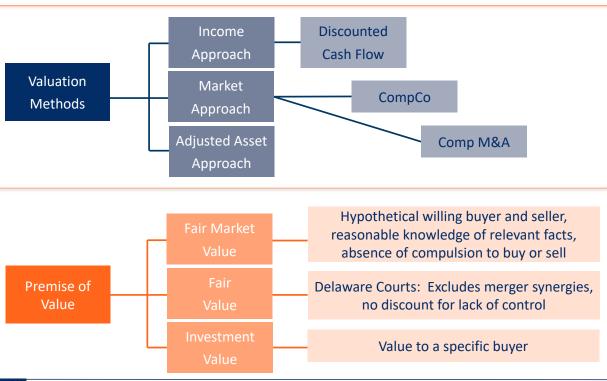
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Valuation Methods	15
Comparable Company Analysis ("CompCo")	16
Comparable Transactions Analysis ("Comp M&A")	24
Income Approach	28
Other Valuation Considerations	34
Cross Examination Questions	36
Battle of the Experts: Mirant Corporation	37

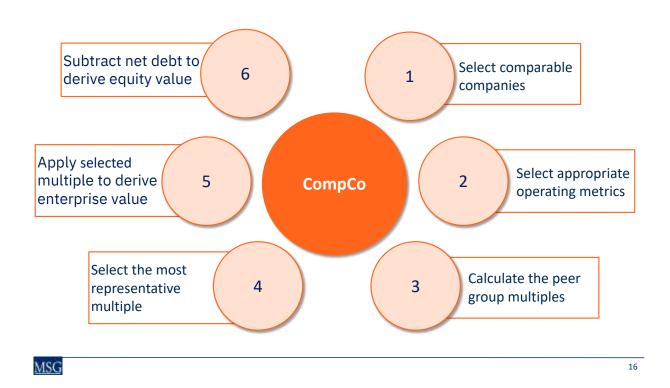
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14

Valuation Methods and Premise of Value



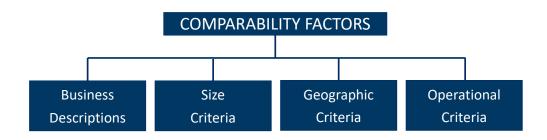
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CompCo Valuation

Comparable Company Analysis ("CompCo")

1 Identify Public Companies Comparable to the Subject Company



Note: All other things being equal, a small set of highly comparable companies is preferable to a large set of loosely comparable companies

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- 2 Choose the Appropriate Operating Metrics
 - Multiples can be based on historical and/or projected (aka forward) financial measures

Business Enterprise Value ("BEV") Multiples

Operating Multiples:

Revenue

EBITDA

EBIT

Equity Multiples

Operating Multiples:

Net Income



18

CompCo Valuation

Calculate the Peer Group Multiples

3 Compute Business Enterprise Value ("BEV") for each Comparable Companies

Market Value of Equity:

(share price) x (shares outstanding)



Market Value of Debt:

If publicly traded: (bond price) x (par outstanding)
If not publicly traded: book value

Deduct cash balance to derive net debt



Market Value of Preferred Stock:

If publicly traded: (share price) x (shares outstanding)

If not publicly traded: book value

BEV:

market value of equity

- + market value of net debt
- + market value of preferred stock



Calculate the Peer Group Multiples



Exclude non-recurring items in this calculation

Calculate Equity Multiples: Divide the Operating Figure by Equity Value

Exclude non-recurring items in this calculations

Peer group multiples are multiplied by the subject company's analogous operating figure



20

CompCo Valuation

Sample CompCo Multiples



Comparable	Enterprise	EBITDA	EV/EBITDA
Companies	Value	2019	2019
Company 1	\$1,000	\$132	7.6x
Company 2	3,000	366	8.2x
Company 3	4,000	487	8.2x
Company 4	2,000	386	5.2x
Company 5	1,500	214	7.0x
Upper Quartile			8.2x
Mean			7.4x
Median			7.6x
Lower Quartile			7.0x

If it is the most representative multiple

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Equations for CompCo Analysis

5

Derive Business Enterprise Value:

BEV
$$_{Subject}$$
 = (BEV/EBITDA MULTIPLE $_{Selected}$) x (EBITDA $_{Subject}$)

6 Derive Equity Value:

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22

CompCo Valuation

Sample CompCo Valuation

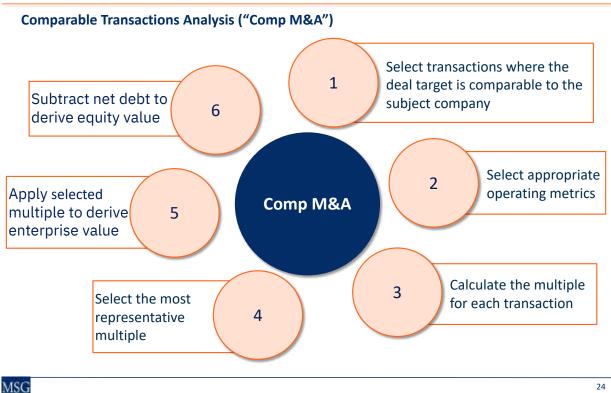
Apply the selected trading multiple and use the CompCo analysis equations to derive equity value:

CompCo Valuation		
Subject EBITDA 2019	\$ 400	
Selcted Trading Multiple	7.6x	
Business Enterprise Value	 3,040	
Debt	(550)	Median EV/EBITDA
Cash	300	multiple from the peer group
Equity Value	 2,790	beer Brown

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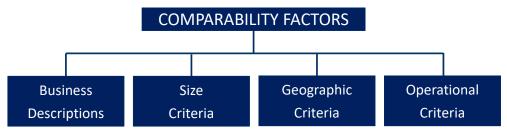
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Comp M&A Valuation



Comp M&A Valuation

1 Employ the same comparability factors used in the CompCo analysis to identify transactions where the target of the deal is comparable to the subject company



- 2 An analogous process to the steps used in the CompCo methodology, is applied to each of the comparable transactions to ultimately determine multiples
- calculate multiples select the most representative multiple

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Comp M&A Valuation

Sample Comp M&A Multiples

4

Select the Most Representative Multiple:

Transaction	Enterprise	EBITDA	EV/EBITDA
Value	Value	2019	2019
\$800	\$1,000	\$100	10.0x
1,750	3,000	350	8.6x
3,200	4,000	500	8.0x
1,850	2,000	380	5.3x
1,000	1,500	200	7.5x
			8.6x
			8.0x
			8.0x
			7.5x
	Value \$800 1,750 3,200 1,850	Value Value \$800 \$1,000 1,750 3,000 3,200 4,000 1,850 2,000	Value Value 2019 \$800 \$1,000 \$100 1,750 3,000 350 3,200 4,000 500 1,850 2,000 380

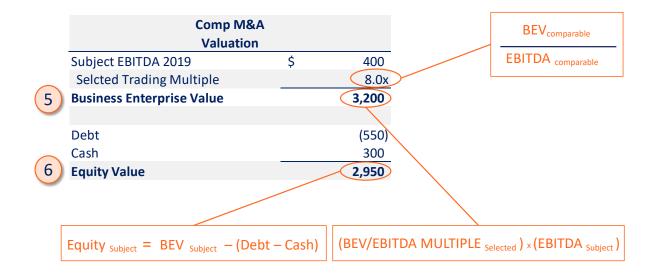
If it is the most representative multiple

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26

Comp M&A Valuation

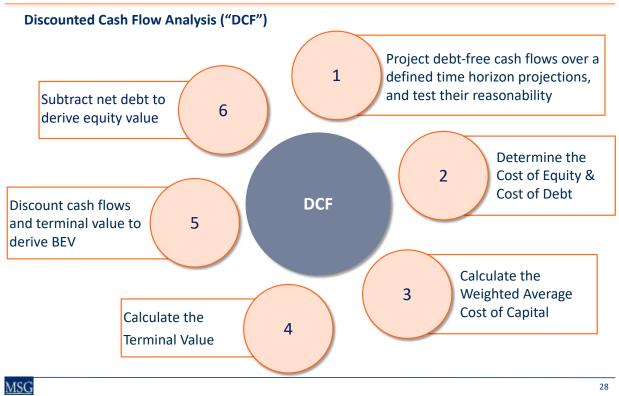
Sample Comp M&A Valuation



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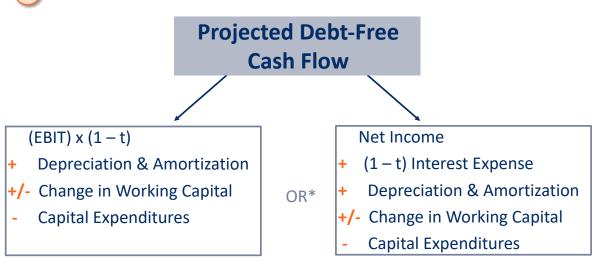
Income Approach



Income Approach

Debt Free Cash Flows

1) Project the Future Cash Flows



*Note: by definition, the results of the two boxes above are identical

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Income Approach

Determination of Cost of Equity

2 <u>Cost of Equity</u>: the return necessary to compensate equity investors for the risks associated with ownership

The Capital Asset Pricing Model ("CAPM"): employed to calculate a company's cost of equity

CAPM formula:

$$Re = Rf + \beta(Rm - Rf) + Rs$$

- Re = the cost of equity
- Rf = the risk-free rate (typically based on US treasury bonds)
- β = the Beta, or measure of systemic risk
- (Rm Rf) = the equity risk premium
- Rs = other premium(s), typically related to firm size, country risk or a specific risk borne by the subject company

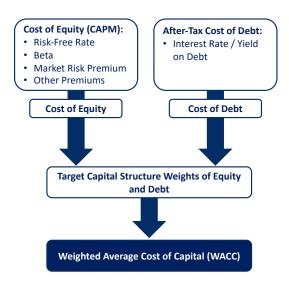


30

Income Approach

Determination of Weighted Average Cost of Capital ("WACC")

- 3 Calculate the <u>WACC</u>:
 - Determine cost of debt, cost of common equity, and cost of preferred equity financing
 - Multiply the cost of each source of capital by the proportion of the source of capital in the firm's capital structure
 - Sum the weighted costs to derive the firm's cost of capital



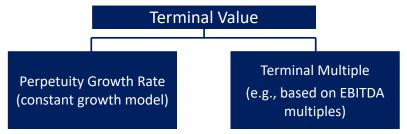
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Income Approach

Terminal Value

- 4 Calculate the Terminal Value
 - Terminal Value: the present value as of the terminal year of a business' cash flow projected beyond the detailed forecast period
 - Annual cash flows are projected for a finite period, but a company is generally assumed to be a going concern entity (i.e. expected to operate for the foreseeable future)



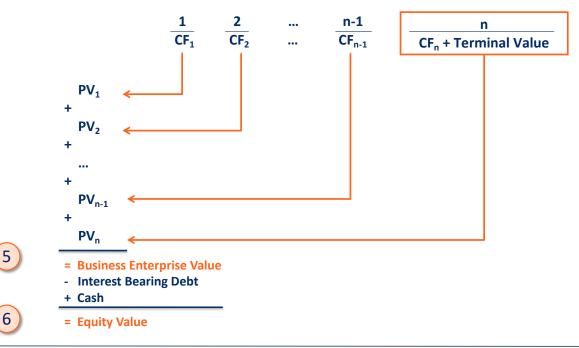
Note: the terminal multiple should imply a reasonable terminal growth rate and vice versa

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32

Income Approach

Calculating Enterprise Value and Equity Value

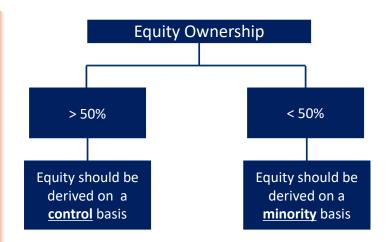


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Other Valuation Considerations

Control Premium or Minority Interest Discount

- Application is
 Dependent on Facts
 and Circumstances
 - Large minority blocks
 - Swing vote blocks
 - Ability to improve the company
 - Availability of data



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34

Other Valuation Considerations

Lack of Marketability

Value of Marketability

An investment's value is dependent on the ability to monetize that investment.

Liquidity has value to investors.

Ready marketability can limit investment risk.



Standard Understanding

All things being equal, a freely marketable interest is worth more than one which is not traded regularly in public markets.



Applicable to Private Companies

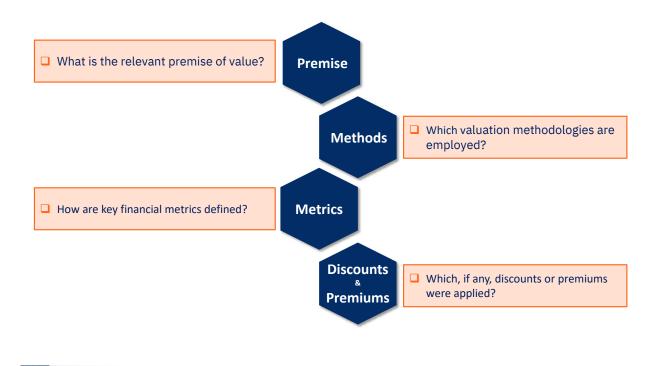
Not traded on any national exchanges.

More difficult to value than public companies.



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Focus Topics and Potential Cross Examination Issues



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Battle of the Experts: Differing Valuations

Case Study: Mirant Corporation

Party	Firm	Торіс
Creditors	Miller Buckfire	Valuation
Creditors	PA Consulting Group	Energy
Creditors – MAGI	Houlihan Lokey Howard & Zukin	Valuation
Debtors	The Blackstone Group	Valuation
Debtors	Charles River Associates	Energy
Equity	Levitan & Associates	Energy
Equity	Slater Energy Consultants	Energy
Equity	Peter J. Solomon Company, L.P.	Valuation
Equity	Benjamin Schlesinger & Ass.	Energy
Preferred/Convertibles	Michel-Shaked Group	Valuation

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37

Battle of the Experts: Differing Valuations

- ☐ The valuation experts differed on nearly every aspect of their valuation methodology
 - **Calculation of Comparable** Companies' EBITDA

 - **Income from Minority Investments**
 - **Forward vs Historical Multiples**
 - **Calculation of Beta**
 - **Market Risk Premium**
 - **Other Premiums**

- · Application of WACC for **International Cash Flows**
- Operating vs Non-Operating Assets Growth Rates and EBITDA Multiples used to Calculate Terminal Value
 - Consideration of Nonoperating **Assets**
 - Valuation of Excess Working Capital
- ☐ The lowest value concluded by an expert was \$7.4 billion and the highest was \$13.5 billion, with a difference of \$6.1 billion.

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Faculty

David M. Hillman is a partner with Proskauer LLP in New York, co-head of its Private Credit Restructuring Group and a member of its Business Solutions, Governance, Restructuring & Bankruptcy Group. He has more than 25 years of experience with an emphasis on representing private credit lenders, private funds, sovereign wealth funds and other alternative lenders and distressed investors in special situations and restructurings both in and out of court, whether the lender is secured or unsecured, unitranche or structured preferred. Mr. Hillman has experience in every phase of restructuring and distressed investing, including credit bidding sales under § 363, debt-for-equity swaps, chapter 11 plans, out-of-court restructurings and foreclosures, and navigating intercreditor issues involving the relative rights of majority and minority lenders. He also litigates the issues facing private credit lenders, including issues involving plan confirmation, solvency, valuation, intercreditor disputes, financing and cash-collateral disputes, fraudulent transfers, equitable subordination, recharacterization, breach of fiduciary duty and similar disputes. Mr. Hillman was listed as a "leading individual" in bankruptcy/restructuring by Chambers USA and as a leader in his field by New York Super Lawyers. A member of ABI, he speaks frequently on bankruptcy-related topics, including recent decisions affecting secured creditor rights and preparing creditors for bankruptcy risks. Mr. Hillman received his B.A. cum laude from the State University of New York at Oneonta and his J.D. cum laude from Albany Law School, where he was associate editor of the *Albany Law Review*.

William Jeffers, CFA is a managing principal at The Griffing Group in Oak Park, Ill., where he provides financial valuation services to attorneys and corporate clients for use in complex commercial litigation and M&A transactions. Since joining the firm in 2010, he has been retained to provide expert witness testimony and expert consulting services in a number of litigation matters adjudicated in the Delaware Court of Chancery and other venues. His analysis has focused on determining the value of securities and measuring economic damages in M&A litigation, shareholder disputes, and contract disputes. Mr. Jeffers has spent his entire professional career analyzing businesses, business interests and financial assets to determine their value. Over the past 23 years, he has valued business interests for financial and tax reporting purposes, in addition to his litigation work. Prior to this, Mr. Jeffers spent 15 years as a commercial banker responsible for providing financing for large and medium-sized companies in various industries, located primarily in the Midwest. He received his B.A. in government in 1977 from Oberlin College, and his M.A. in political science in 1980, his M.S. in urban and regional planning in 1982, and his M.B.A. in finance and investment banking in 1983 from the University of Wisconsin.

Dr. Israel Shaked is a founder and managing director of The Michel-Shaked Group in Boston, where he provides valuation, expert testimony, corporate finance and business consulting services to corporations and government entities worldwide. He is also a professor of finance and economics at the Boston University Questrom School of Management and a two-time winner of Boston University's Broderick Prize for Excellence in Teaching. For more than 43 years, his academic and professional research covers such areas as valuation, bankruptcy, fraudulent conveyance, investment analysts, financial distress, LBOs, international business, mergers and acquisitions, economics, corporate structure analysis, corporate financial decisions and capital markets. Dr. Shaked was director of the Boston Chartered Financial Analysts (CFA) Examination Review Program for 19 years, as well as a

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co-founder and director of the Institute of Chartered Pension Professionals (ICPP). He served for 20 years as a member of the *ABI Journal* editorial board and a contributing editor. He has also authored or co-authored numerous articles and several books, including *A Practical Guide to Bankruptcy Valuation*, *Second Edition* (ABI 2016), and he appears regularly on television and in the press commenting on contemporary financial and business issues. Dr. Shaked has delivered hundreds of seminars to corporate executives and law firms globally, and has been engaged as an expert witness offering testimony at depositions, arbitrations and trials on numerous cases. He is renowned and relied on for his expertise in valuation matters, and his ability to explain the complexities of valuation clearly to a judge, jury, arbitrator or regulatory authority. Mr. Shaked received a B.A. in economics and a B.A. in statistics from the Hebrew University of Jerusalem, his M.B.A. with a concentration in finance from the Hebrew University of Jerusalem, and his Doctor of Business Administration (D.B.A.) from Harvard Business School.