Entrepreneurial Harvest

*How Investors Value Their Exit & How It Can Help Your Unit Valuation*

Jim Nolen, Associate Director
Hicks Muse Tate & Furst Center for Private Equity Finance
McCombs School of Business
Exiting (Harvesting)

- The process by which entrepreneurs, management and investors find public or corporate buyers for a portion or all of the company’s shares.

- This “liquidity event” allows current investors to:
  - Realize return and capture the value created
  - Reduces risk by taking money off the table
  - Creating future growth options with an infusion of new capital and/or a new strategic direction

- Seller’s are often emotionally tied to the business and use the 4-M valuation method – ‘make me a multi-millionaire” method
Value is the amount at which a property would change hands in an open market between a hypothetical buyer and seller, with both parties having reasonable knowledge of the relevant facts and neither being under compulsion to buy or sell.

Intrinsic Value is the present value of the perceived future benefits discounted at the appropriate risk adjusted return.

Price is the maximum consideration a buyer would pay a seller for a specific property at a given time.

S&P reported Purchase Price-to-EBITDA LBO multiples for first half of 2018 were 9.8x, compared to 10.6x for all of 2017. Debt-to-EBITDA multiples were 5.6x vs. 5.7x in 2017.
Exit Strategies

Exit Options

- Initial Public Offering (IPO)
- Selling the Company
- Professional Management
  - *Cash Cow*
- Dividend Recap
- Strategic Acquirer
  - (Merger)
- Secondary Sale
  - Financial Buyer
- Management Buyout (MBO)
  - or ESOP
- Liquidation
The Baby Boomers (about 70 million of them) will sell or bequeath $10 trillion worth of assets over the next two decades.
- These assets are held in more than 12 million privately owned businesses.
- More than 70 percent of these companies are expected to change hands.

2018 Pepperdine Capital Markets Project: 264 business broker respondents from 2017
PE Portfolio Exit Strategies

Figure 60. Exit Plans for Portfolio Companies

- 31% IPO
- 29% Sell to a public company
- 20% Sell to a hedge fund
- 12% Sell to another PEG
- 4% Sell to a private company
- 2% Management buyout
- 1% Liquidate or Bankrupt
- 1% Other

2018 Pepperdine Capital Markets Project: 43 private equity respondents from 2017
Dividend Recap

Before Recapitalization
- Debt
- Equity

After Recapitalization
- Debt
- Equity
- Cash Dividend to Shareholders
Dividend Recap

- A dividend recapitalization would be similar to an equity cash-out refi on real estate or a sale-leaseback on equipment.
  - If the appraised value and cash flow of the property is sufficient to allow additional debt, the borrower may refinance the first lien in an amount greater than the current loan balance or take out a second lien on the property and the new funds are distributed to the borrower.
  - An appraisal on the asset was most likely required by the lender. Since there is no transaction, finding out the value of the property at the time of the refinance can be extremely difficult.
  - A sale-leaseback is a way to monetize a fully depreciated piece of equipment and still retain usage of the asset.
Leveraged ESOP Buyout

1. Employer firm guarantees payment of loan.
2. ESOP trust borrows money from lender.
3. Cash from loan is used to buy owner’s stock.
4. Stock is sent to ESOP trust for benefit of employees.
5. Employer firm makes annual contribution for employee stock purchases.
6. ESOP trust makes payment on loan.
ESOPs

- ESOPs would be similar to placing real estate or other property in a Family Limited Partnership and distributing LP units to family members.
  - A valuation would be done and may typically include discounts for lack of marketability and lack of control, but IRS scrutinizes these transactions.

- Employee Stock Ownership plans are governed under ERISA and the trustee has fiduciary responsibilities to the plan participants.
  - ESOPs can be levered or unlevered.
  - Stock issued to participants can be newly issued stock (diluting current owner but cash is unaffected) or contributing tax-deductible cash to the plan and using the cash to acquire shares from the current owner.
  - If the business owner sells 30% or more of the company and reinvest the proceeds into publicly traded stock, the gain is tax deferred.
IPO and Sale the Business

- When a company goes public, the SEC requires full disclosure and the capital markets provide an open market for willing buyers and sellers to establish the price per share and market capitalization of the firm. While the shares may now be liquid, the trade are for minority blocks of ownership in the company.

- Sell-side investment bankers and business brokers, who are compensated on transaction price, can run an auction process or negotiate with a potential buyer in an attempt to attain the highest price for the seller. Premiums may be paid for control of the firm and discounts may be assessed for risks and illiquidity.

- Buy-side intermediaries, financial buyers, strategic buyers may offer a higher or lower price based on the buyer’s perceived stand-alone value of the seller’s business, expected synergies, risks and financing options.

- Business appraiser are trying to determine the fair market value of the company, but must consider prices that are being paid by willing buyers and sellers.
Factors influencing the value of a business

- Replacement costs of the assets
- Historical and projected income and cash flow
- Growth potential
- Risks (Key person, technology, competition, sensitivity to economy, regulatory)
- Concentration of customers/suppliers
- Macroeconomic conditions, taxes, financing availability and cost
- Comparable value of similar companies
- Number and type of potential buyers (strategic vs. financial)
- Size of the business
- Minority interest vs. control position
- Marketability/Liquidity
- Intangible value (IP, barriers to entry)
What factors matter in real estate values?

- Market trends
- Location (condition of area, schools, businesses)
- Presentation
- Zoning and parking
- Unusual features (Finish-out)
- Similarity of properties (amenities)
- Size (1 acre vs 1000 acres)
- Inventory (number of sellers, affordability)
- Number of buyers (credit markets, growth factors, urbanization)
- Time on Market (average days on market)
- Substitutes (rental market/vacancies)
- Renovation potential
- Tax implications
What factors affect personal property?

- Type of property
- Age of the asset
- Condition of the asset
- Replacement cost
- Depreciated cost basis
- Significant changes in style and technology
- Supply and demand for the asset
- Macroeconomic and industry factors
- De-commissioning, installation and transportation costs
- Financing alternatives and costs
Valuation Methodologies

**Approach**

- **INCOME**
  - Discounted Cash Flow
    - Estimated future earnings
  - Capitalized Earnings
    - Historical earnings

- **MARKET**
  - Comparable Sale
    - Private company transactions involving similar businesses
  - Guideline Company
    - Public company stock prices

- **ASSET**
  - Adjusted Net Assets
    - Appraised value of assets and liabilities
Valuation Methodologies

Public Guideline Comparable Companies
- "Public Market Valuation"
- Valuation based on trading multiples of public firms.
- Can use trailing or forward perspective
- Does not include a control premium

Precedent Transactions Analysis
- "Private Market Valuation"
- Valuation based on multiples paid for comparable firms in sale transactions
- Includes a control premium.
- Includes a discount for lack of market-ability if firm is privately held.

Discounted Cash Flow Analysis
- "Intrinsic" value of the business
- Present Value of projected free cash flow (FCF, APV, CCF & ECF models)
- Sensitive to terminal value assumptions
- Risk in cash flows and capital structure captured in the discount rate

Leveraged Buyout/Recap Analysis
- Value to a financial or LBO Buyer
- Valuation based on debt repayment and return on equity capital.
- Estimate of the target capital structure required

Other
- Adjusted Net Asset
- Valuation by Sum of the Parts
- Liquidation Analysis
- Break-up analysis
- Real Option models
- Dividend Discount Model
- Ad-hoc Rules of Thumb (price per Subscriber, etc.)
Other key findings include:

- When using valuation methods to determine the value of a business, the most popular methods used by respondents were discounted future earnings method (36%), capitalization of earnings method (27%) and guideline company transactions method (15%).
- Recast (adjusted) EBITDA multiple is the most popular when using multiple valuation method.
- Respondents use an average risk-free rate of 3.02% and a market (equity) risk premium of 6.02%.
- Average long-term terminal growth is estimated at 3.17%.

Figure 84. Usage of Valuation Methods

Figure 85. Usage of Multiple Methods

2018 Pepperdine Capital Markets Project: 164 business appraiser respondents from 2017
Investment Bank’s Valuation Methodologies

Figure 42. Usage of Valuation Methods

- Capitalization of earnings method: 22%
- Discounted future earnings method: 28%
- Adjusted net asset method: 5%
- Guideline public company method: 10%
- Guideline company transactions method: 25%
- Gut feel: 6%
- Other: 4%

2018 Pepperdine Capital Markets Project: 88 investment bank respondents from 2017
EBITDA is the “holy grail” in M&A. Surrogate for FCF in a mature company (low growth) where CAPEX and Working Capital are minimal.
Football Field of Multiples Analysis

Implied Equity Value for "Repsol S.A."
High, Low, Mean and Median Values for each Multiple

Million of USD

Total Revenue LTM
EBITDA LTM
EBIT LTM
Revenue NTM
EBITDA NTM
Basic EPS LTM
EPS NTM
Tangible Book Value/Share LTM
Football Field of Valuation Methods

Sale Side would probably use this to establish an asking price of $145. Buy Side would use this to bid $75. Negotiated price might end up close to the $100.
## Median EBITDA Multiples by Size & Industry

**Size and Industry Matters**

**Table 31. Median Deal Multiples by EBITDA Size of Company**

<table>
<thead>
<tr>
<th>EBITDA</th>
<th>Manufacturing</th>
<th>Construction &amp; engineering</th>
<th>Consumer goods &amp; services</th>
<th>Wholesale &amp; distribution</th>
<th>Business services</th>
<th>Basic materials &amp; energy</th>
<th>Healthcare &amp; biotech</th>
<th>Information technology</th>
<th>Financial services</th>
<th>Media &amp; entertainment</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0K - $999K EBITDA</td>
<td>3.5</td>
<td>3.8</td>
<td>4.8</td>
<td>3.8</td>
<td>4.3</td>
<td>2.5</td>
<td>6.0</td>
<td>5.5</td>
<td>6.0</td>
<td>2.5</td>
<td>4.3</td>
</tr>
<tr>
<td>$1M - $4.99M EBITDA</td>
<td>5.5</td>
<td>5.0</td>
<td>5.8</td>
<td>5.0</td>
<td>5.5</td>
<td>4.5</td>
<td>6.5</td>
<td>5.8</td>
<td>6.0</td>
<td>6.5</td>
<td>5.6</td>
</tr>
<tr>
<td>$5M - $9.99M EBITDA</td>
<td>6.5</td>
<td>6.5</td>
<td>7.5</td>
<td>6.0</td>
<td>5.8</td>
<td>5.0</td>
<td>6.5</td>
<td>6.3</td>
<td>6.5</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>$10M - $24.99M EBITDA</td>
<td>6.8</td>
<td>6.5</td>
<td>7.5</td>
<td>7.3</td>
<td>6.5</td>
<td>5.5</td>
<td>8.0</td>
<td>8.0</td>
<td>6.8</td>
<td>11.0</td>
<td>7.4</td>
</tr>
<tr>
<td>$25M - $49.99M EBITDA</td>
<td>9.0</td>
<td>n/a</td>
<td>9.5</td>
<td>n/a</td>
<td>7.3</td>
<td>6.5</td>
<td>11.0</td>
<td>9.0</td>
<td>8.3</td>
<td>n/a</td>
<td>8.7</td>
</tr>
<tr>
<td>$50M+ EBITDA</td>
<td>10.0</td>
<td>n/a</td>
<td>11.0</td>
<td>n/a</td>
<td>8.8</td>
<td>7.5</td>
<td>11.0</td>
<td>10.0</td>
<td>8.3</td>
<td>n/a</td>
<td>9.5</td>
</tr>
</tbody>
</table>

2018 Pepperdine Capital Markets Project:  88 investment bank respondents from 2017
Leverage Multiples – Loose Credit Affects Multiples Paid

### Table 32. Median Total Leverage Multiples by Size of Company

<table>
<thead>
<tr>
<th>EBITDA</th>
<th>Manufacturing</th>
<th>Construction &amp; engineering</th>
<th>Consumer goods &amp; services</th>
<th>Wholesale &amp; distribution</th>
<th>Business services</th>
<th>Basic materials &amp; energy</th>
<th>Healthcare &amp; biotech</th>
<th>Information technology</th>
<th>Financial services</th>
<th>Media &amp; entertainment</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0K - $999K EBITDA</td>
<td>3.5</td>
<td>n/a</td>
<td>3.3</td>
<td>3.3</td>
<td>2.8</td>
<td>1.3</td>
<td>2.5</td>
<td>4.8</td>
<td>n/a</td>
<td>n/a</td>
<td>3.0</td>
</tr>
<tr>
<td>$1M - $4.99M EBITDA</td>
<td>4.0</td>
<td>2.3</td>
<td>4.0</td>
<td>4.0</td>
<td>3.0</td>
<td>2.3</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.5</td>
<td>3.6</td>
</tr>
<tr>
<td>$5M - $9.99M EBITDA</td>
<td>4.0</td>
<td>5.5</td>
<td>4.3</td>
<td>n/a</td>
<td>3.5</td>
<td>2.5</td>
<td>5.3</td>
<td>4.0</td>
<td>n/a</td>
<td>n/a</td>
<td>4.1</td>
</tr>
<tr>
<td>$10M - $24.99M EBITDA</td>
<td>4.5</td>
<td>n/a</td>
<td>4.5</td>
<td>n/a</td>
<td>4.0</td>
<td>3.0</td>
<td>6.3</td>
<td>4.0</td>
<td>10.0</td>
<td>n/a</td>
<td>5.2</td>
</tr>
<tr>
<td>$25M - $49.99M EBITDA</td>
<td>6.3</td>
<td>n/a</td>
<td>6.0</td>
<td>n/a</td>
<td>4.0</td>
<td>3.5</td>
<td>8.5</td>
<td>5.5</td>
<td>10.0</td>
<td>n/a</td>
<td>6.3</td>
</tr>
<tr>
<td>$50M+ EBITDA</td>
<td>6.8</td>
<td>n/a</td>
<td>7.8</td>
<td>n/a</td>
<td>4.8</td>
<td>4.3</td>
<td>8.5</td>
<td>n/a</td>
<td>10.0</td>
<td>n/a</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Average senior leverage multiples observed by respondents varied from 2.4 to 6.3. Senior leverage is up from last year.
Dividend Discount Model

- Cash is king! At the end, the only way to return money back to investors is through dividend. Dividends should be the only thing that matters.
  - From “The Theory of Investment Value” by John Burr Williams (1938): “A stock is worth the present value of all the dividends ever to be paid upon it, no more, no less... Present earnings, outlook, financial condition, and capitalization should bear upon the price of a stock only as they assist buyers and sellers in estimating future dividends.”

\[
\text{Value of Equity} = \sum_{t=0}^{\infty} \frac{D_t}{(1 + r_e)^t}
\]

- If growing perpetuity…Gordon Dividend Growth Growth Formula

\[
\text{Value of Equity} = \frac{D_1}{(r_e - g)} = \frac{D_0(1 + g)}{(r_e - g)}
\] How should we estimate “g” in perpetuity?

The DDM is the justification for using cap rates in real estate transactions, Net Operating Income (NOI) or Free Cash Flow (FCF) can be substituted for dividends in the numerator.
Dividend Discount Model – Pros and Cons

• **Pros:**
  - Simple and intuitive
  - Provides directly the value of the equity (stock price)

• **Cons:**
  - Very rarely used (used only in CFA tests!)
  - Limited to mature companies with very predictable dividend forecast
  - In order to forecast dividends, you still have to forecast FCF, leverage policy, but now in addition you need also to predict how much the company reinvest its earnings….
  - Cost of equity changes if leverage changes
Multiples or Comp Analysis

Guideline public comps or precedent transaction comps can be used for multiples analysis.

Enterprise and Equity Value Multiples

<table>
<thead>
<tr>
<th>Equity Value Multiples</th>
<th>Enterprise Value Multiples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes into account capital structure in decision making</td>
<td>Focus towards quality of operation</td>
</tr>
<tr>
<td>Denominator after interest expense</td>
<td>Unlevered Capital Structure</td>
</tr>
<tr>
<td>Main multiples are</td>
<td>Denominator before interest expense</td>
</tr>
<tr>
<td>P/E ratio</td>
<td>Main multiples are</td>
</tr>
<tr>
<td>Equity Market Value / Net Income</td>
<td>EV / Sales</td>
</tr>
<tr>
<td>Price / Book ratio</td>
<td>EV / EBITDA</td>
</tr>
<tr>
<td>Price / CFPS</td>
<td>EV / EBIT or EV / EBITA</td>
</tr>
</tbody>
</table>

Summary the Results

- Summary Statistics
  - Mean, Median, High Low (The Median is the most meaningful statistic because it will naturally screen outliers)
- Outliers should be evaluated and possibly eliminated
Multiples Approach and DCF

• The Multiples approach is a very rough approximation of the DCF

• Example: From DCF to P/E

\[ V = \sum_{t=0}^{\infty} \frac{E[FFCF_t]}{(1+r)^t} \approx \frac{FFCF}{r-g} \approx \frac{Earnings}{r-g} \]

\[ \frac{V}{E} \approx \frac{1}{r-g} \]

\[ \frac{V/N}{E/N} \approx \frac{1}{r-g} \]

\[ \frac{P}{EPS} \approx \frac{1}{r-g} = \text{Multiple} \]

Example: \[ \frac{$10}{$1} \approx \frac{1}{.125 - .025} = 10x \]
The total value of a business (firm), $V_F$, equals the present value of the firm's free cash flows (FCFF) that the firm is expected to provide investors (both debt and equity), discounted by the firm's weighted average cost of capital (WACC).

$$V_F = \sum_{t=0}^{\infty} \frac{FCFF_t}{(1 + WACC)^t}$$

where:
- $t$ is the period in which the cash flow is received.

The free cash flows from the firm are calculated as follows:

- Net Revenue
- COGS & Operating Expenses
- Earnings Before Interest, Taxes, Dep & Amort (EBITDA)
- Depreciation and Amortization
- Op. Inc. (EBIT)
- x (1 - Average Tax Rate)
- Net Operating Profit After Tax (NOPAT)
+ Depreciation and Amortization
- Capital Expenditures
- Additions to Net Working Capital
- Free Cash Flows from the Firm (FCFF)
FCF and Firm Value

The value of a firm at time zero can be expressed by the Free Cash Flow Model

\[ V_0 = \frac{FCF}{(1 + r)^1} + \frac{FCF}{(1 + r)^2} + \frac{FCF}{(1 + r)^3} + \ldots + \frac{TV_t}{(1 + r)^t} \]

where

- \( V_0 \) = Value at time zero
- \( FCF_t \) = Annual Free Cash Flow
- \( TV_t \) = Terminal Value at period t
- \( r \) = Weighted Average Cost of Capital

Note: Free Cash Flow = EBIT(1-T) + Deprec - W/C - CAPEX
Weighted Average Cost of Capital (WACC)

- The opportunity cost of capital is typically calculated as follows:

\[ WACC = r_d (1 - t_c) \frac{V_D}{V_F} + r_e \frac{V_E}{V_F} \]

Where:
- \( r_d \) is the cost of debt (Kd is often used for cost of debt)
- \( t_c \) is the tax rate that applies to interest deductions
- \( r_e \) is the cost of equity (Ke is often used for cost of equity)
- \( V_D/V_F \) is the market value of debt/market value of the asset
- \( V_E/V_F \) is the market value of equity/market value of the asset
The Cost of Equity: CAPM

From the firm’s perspective, the expected return is the Cost of Equity Capital:

$$\bar{R}_i = R_F + \beta_i (\bar{R}_M - R_F)$$

To estimate a firm’s cost of equity capital, we need to know:

1. The risk-free rate, $R_F$
2. The expected market risk premium, $\bar{R}_M - R_F$
3. The company beta, $\beta_i = \frac{Cov(R_i, R_M)}{Var(R_M)} = \frac{\sigma_{i,M}}{\sigma_M^2}$
Financial Leverage

- **Financial leverage** is the sensitivity of a firm’s fixed costs of *financing*.
- The relationship between the betas of the firm’s debt, equity, and assets is given by:

\[
\beta_{Stock} = \beta_{assets} \left(1 + \frac{Debt(1-T_C)}{Equity}\right)
\]

- Financial leverage always increases the equity beta relative to the asset beta.
Cost of Equity Assumptions

- What should be used for the Risk Free Rate and what maturity should the instrument be?
- What index should be used to get the expected market return?
- Historical or implied risk premium? Arithmetic or Geometric?
- Over what period of time should the covariance be calculated to get Beta? Daily or weekly prices? Wednesdays or Fridays?

From Professor Damodaran’s NYU website:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Equity risk premium (US) =</td>
<td>4.77%</td>
</tr>
<tr>
<td>Historical Equity risk premium (Global) =</td>
<td>3.20%</td>
</tr>
<tr>
<td>Average implied ERP (last decade) =</td>
<td>5.54%</td>
</tr>
<tr>
<td>Average implied ERP (1960-Current) =</td>
<td>4.16%</td>
</tr>
<tr>
<td>Historical High ERP (1960-Current) =</td>
<td>6.45%</td>
</tr>
</tbody>
</table>

Implied Risk Premium in current level of Index = 5.16%
Terminal Value Assumptions

- Financial theory states that the cash flows after the terminal year and into perpetuity should be discounted using the Gordon Growth Dividend Discount Model.
  - Year n’s cash flow is multiplied times (1+g) and then capitalized into perpetuity at r-g.

- Investment bankers routinely put a multiple from their comps analysis on the final year as the price they think they can sell the business for at that time.
  - Academics hate this method because you are mixing intrinsic value (DCF) with relative value (comps)
Hot Topics in Valuation

- Valuation professionals often make adjustments to their valuation analysis that are often contentious:
  - Recasting Financial Statements - Adjusting for non-recurring income and expenses, excessive owner compensation, etc.
  - Built-in capital gains tax and tax-affecting the cash flows on S Corps/LLCs
  - Discounts for Lack of Marketability and Lack of Liquidity
    - FLPs and IRC Section 2704
  - Discounts for Lack of Control or Premiums for Control
  - Size Discounts
  - Adjusting the discount rate for unique risk (Build-up Method) such as key person risk, concentration risks, etc.
  - Handling of Intangible Assets such as intellectual property and personal or professional goodwill.
  - Assumptions used in estimating the terminal value in a DCF model.
  - Throwing out “outliers”, using weighted averages, means vs. medians
  - Selection bias on comparable companies
  - Abnormally low risk free rates
  - Estimating the expected equity premium (historical vs. implied)
  - Increased use of “calculation of value” instead of a business appraisal
Summary

- Valuation is as much art as science.
  - The experience of the appraiser to make informed judgements is critical.
  - Increased pressure to license business appraiser, but who should provide the accreditation?
  - Increased Daubert challenges to exclude the presentation of unqualified evidence to the jury.
Contact Information

Jim Nolen
Distinguished Senior Lecturer
Associate Director of the Hicks Muse Tate & Furst Center for Private Equity Finance
McCombs School of Business
Department of Finance, B 6600
The University of Texas at Austin
Austin, TX 78712
james.nolen@mccombs.utexas.edu
Appendix

Pepperdine’s Survey of Bankers, Private Equity Firms and Business Appraisers
Strategic vs Financial Buyers

Figure 45. Percent of Transactions Involved Strategic and Financial Buyers

- Strategic buyers: 44%
- Financial buyers: 56%

- Platform investments: 48%
- Follow-on investments: 52%

Approximately 22% of respondents did not witness any premium paid by strategic buyers, while 58% saw premiums between 1% and 20%.

2018 Pepperdine Capital Markets Project: 88 investment bank respondents from 2017
PE Median EBITDA Transaction Multiples by Size

Average deal multiples for buyout deals for the prior twelve months vary from 4.0 to 10 times EBITDA depending on the size of the company. Expected returns vary from 20% to 48%.

Table 39. General Characteristics – Buyout Transactions (medians)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of investments (total)</td>
<td>35</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>Average size of investment (in million USD)</td>
<td>3</td>
<td>5</td>
<td>&gt;10</td>
</tr>
<tr>
<td>Expected time to exit (years) (median)</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Equity as % of new capital structure (median)</td>
<td>15%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>% of total equity purchased (median)</td>
<td>95%</td>
<td>85%</td>
<td>75%</td>
</tr>
<tr>
<td>Average deal multiple (multiple of EBITDA)</td>
<td>5.5</td>
<td>7.8</td>
<td>9.5</td>
</tr>
<tr>
<td>Median total expected returns (gross cash on cash pre-tax IRR)</td>
<td>30%</td>
<td>25%</td>
<td>20%</td>
</tr>
</tbody>
</table>

2018 Pepperdine Capital Markets Project: 43 private equity respondents from 2017
PE Valuation Methodologies

Figure 58. Usage of Multiple Methods

EBITDA is still king.

2018 Pepperdine Capital Markets Project: 43 private equity respondents from 2017
# PE Median EBITDA Multiple by Industry & Size

Size and Industry matter

<table>
<thead>
<tr>
<th>Industry</th>
<th>$1M EBITDA</th>
<th>$5M EBITDA</th>
<th>$10M EBITDA</th>
<th>$15M EBITDA</th>
<th>$25M EBITDA</th>
<th>$50M EBITDA</th>
<th>$100M EBITDA</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>5.0</td>
<td>6.0</td>
<td>n/a</td>
<td>4.5</td>
</tr>
<tr>
<td>Construction &amp; engineering</td>
<td>2</td>
<td>2.5</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>3.0</td>
<td>n/a</td>
<td>2.5</td>
</tr>
<tr>
<td>Consumer goods &amp; services</td>
<td>2.0</td>
<td>2.3</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>5.8</td>
<td>6.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Wholesale &amp; distribution</td>
<td>3</td>
<td>3.8</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4.5</td>
<td>5.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Business services</td>
<td>2.5</td>
<td>3.5</td>
<td>3.8</td>
<td>4.0</td>
<td>4.0</td>
<td>6.0</td>
<td>6.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Basic materials &amp; energy</td>
<td>1.5</td>
<td>2.5</td>
<td>3</td>
<td>3.3</td>
<td>3.5</td>
<td>3.5</td>
<td>7.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Healthcare &amp; biotech</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
<td>3.5</td>
<td>4.5</td>
<td>6.5</td>
<td>7.0</td>
<td>4.4</td>
</tr>
<tr>
<td>Information technology</td>
<td>2</td>
<td>3.0</td>
<td>3.5</td>
<td>4.5</td>
<td>5</td>
<td>5.0</td>
<td>6.75</td>
<td>4.3</td>
</tr>
<tr>
<td>Financial services &amp; real estate</td>
<td>2.5</td>
<td>3</td>
<td>4.5</td>
<td>4.5</td>
<td>5.5</td>
<td>6.5</td>
<td>9.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Media &amp; entertainment</td>
<td>2.5</td>
<td>2.5</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>7.5</td>
<td>8.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Average</td>
<td>2.5</td>
<td>3.1</td>
<td>3.6</td>
<td>3.8</td>
<td>4.2</td>
<td>5.4</td>
<td>7.1</td>
<td>4.2</td>
</tr>
</tbody>
</table>

2018 Pepperdine Capital Markets Project: 43 private equity respondents from 2017
Discounts for Lack of Marketability & Firm Size

Figure 87. Discount for Lack of Marketability (DLOM) by Revenue Sizes

- Average DLOM for private operating company with $100,000 in revenues: 16%
- Average DLOM for private operating company with $1M in revenues: 14%
- Average DLOM for private operating company with $25M in revenues: 10%
- Average DLOM for private operating company with $250M in revenues: 8%

- Controlling interest
- Minority interest

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Size and Company Specific Risk Premiums

Figure 90. Size Premiums for Private Companies by Revenue Size

- Size premium for private company ($1 million in revenues): 6%
- Size premium for private company ($25 million in revenues): 5%
- Size premium for private company ($250 million in revenues): 3%

Figure 91. Company Specific Risk Premiums by Revenue Size

- Average company specific risk premium for private company ($1 million in revenues): 5%
- Average company specific risk premium for private company ($25 million in revenues): 3%
- Average company specific risk premium for private company ($250 million in revenues): 2%
Middle-Market PE Activity

US PE middle market activity

- **Deal Value ($B)**
- **Estimated Deal Value ($B)**
- **# of Deals Closed**
- **# of Estimated Deals Closed**

Source: PitchBook

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Middle-Market EBITDA Multiples

US PE middle-market EBITDA multiples

- Debt/EBITDA
- Equity/EBITDA
- Valuation/EBITDA

Source: PitchBook
PE Exits still dominated by M&A vs IPO