

Week 9 – Leveraged Buyouts

## Investment Banking Recruiting

November 1, 2024



# Review of Valuation Quiz

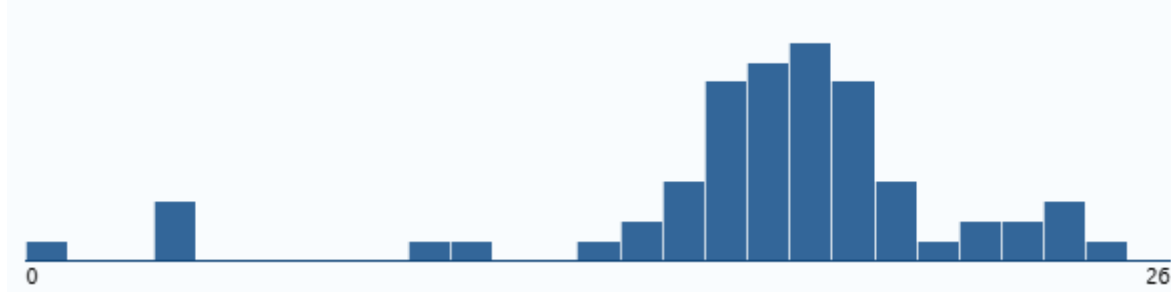
## Weeks 7 & 8 - Valuation

Exam Summary

[Question Details](#)

Number of Students	65
Maximum Score Possible	26.996 pts (100%)
High Score	25.996 (96%)
Median Score	18 (67%)
Mean Score	17.29 (64%)
Low Score	0 (0%)

Score Distribution



## A few things from the IBA Presidency

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- 1. It is not appropriate to name drop a person in a networking reach out email unless you have been given explicit permission to use their name**
- 2. On resumes, your major must match what is currently on your BYU transcript**
  - I.e. you cannot say you are getting a Bachelor of Science in Finance unless you have been admitted to the program
  - You can make this change once you get in
  - Since there is no “Pre-finance” major, this is not allowed either
  - It should say exactly what your BYU account / current transcript says
  - Resumes are a reflection of what you have done, not what you intend to do

What makes an effective coffee chat?

How can you be purposeful in your  
networking?

## Fun story – Adjusted EBITDA



Adjusted EBITDA  
removes one-time,  
irregular, and non-  
recurring items that  
distort EBITDA

## Fun story – Adjusted EBITDA

(Amounts in thousands, except percentages)	Year Ended December 31,	
	2016	2017
<b>Net loss</b> .....	\$(429,690)	\$(933,494)
Income tax (benefit) provision .....	16	(5,727)
Interest and other (income) expense net .....	33,400	7,387
Depreciation and amortization .....	88,952	162,892
Adjustments for Impact of Straight-lining of Rent <sup>(a)</sup> .....	188,746	272,927
Stock-based compensation expense <sup>(b)</sup> .....	22,660	295,362
Stock-based payments for services rendered by consultants <sup>(b)</sup> .....	1,594	7,326
<b>Adjusted EBITDA</b> .....	(94,322)	(193,327)
Other revenue <sup>(c)</sup> .....	(1,744)	(19,106)
Other operating expenses <sup>(d)</sup> .....	—	1,322
Sales and marketing <sup>(e)</sup> .....	42,653	139,180
Growth and new market development <sup>(f)</sup> .....	33,245	98,336
Pre-opening community expenses <sup>(g)</sup> .....	21,223	23,039
<b>Adjusted EBITDA before Growth Investments</b> .....	1,055	49,444
General and administrative expenses <sup>(h)</sup> .....	94,888	183,703
<b>Community Adjusted EBITDA</b> .....	\$ 95,943	\$ 233,147
<b>Membership and service revenue</b> .....	\$ 434,355	\$ 866,438
<b>Adjusted EBITDA Margin</b> .....	(21.6)%	(21.8)%
<b>Adjusted EBITDA before Growth Investments Margin</b> .....	0.2%	5.7%
<b>Community Adjusted EBITDA Margin</b> .....	22.1%	26.9%

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**Do you want more review of  
the material?**

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**Review of Financial Leverage**

**Overview of Private Equity**

**Overview of Leveraged Buyouts**

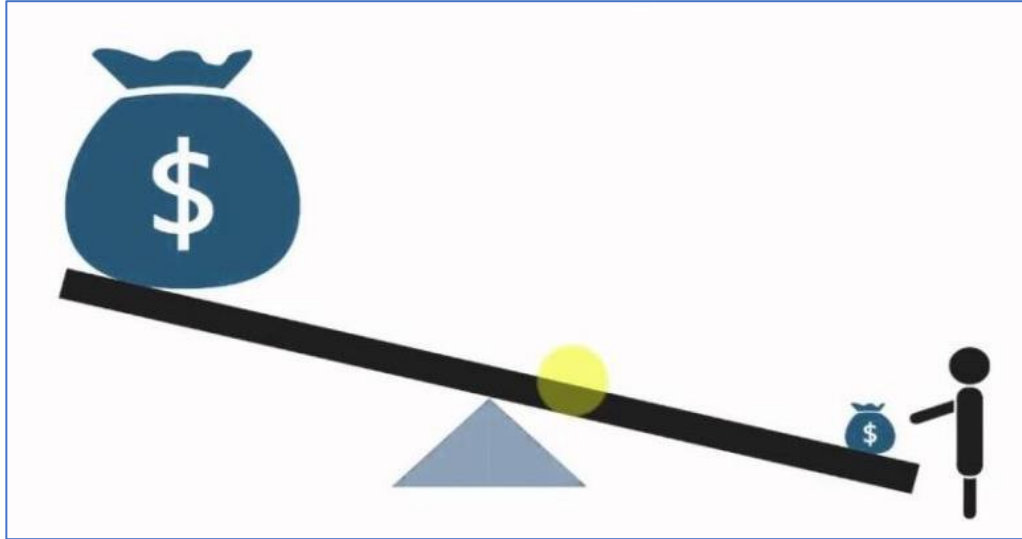
**Paper LBO and LBO Practice**

**Leveraged Buyout Valuation**



# Financial Leverage

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## Financial Leverage

**Leverage is a tool, force, or advantage used to amplify an outcome.** In finance, this simply refers to a device of financial engineering used to enhance ROE. This device is debt – higher debt yields more extreme outcomes as measured by return on equity. Leverage considerations are a crucial part of the financing structure of both M&A deals and LBOs.

# Capital Structure & Value

Economists have studied the impacts of capital structure on value for decades, and have summarized their findings of how capital structure impacts value in the following ways:

## Interest Tax Shield

As financial leverage increases, the interest expense on debt creates a “tax shield” - thus reducing the portion of unlevered free cash flows being distributed to the government, ultimately altering the risk associated with levered cash flows and the weighted average cost of capital

## Costs of Distress

As financial leverage increases, the risk of default (missed payment on interest or principal amortization) increases – therefore a skilled lender will charge higher interest rates on debt as leverage increases to compensate for the higher risk borne in lending

## Market Signals

Increasing financial leverage enhances the returns distributed to a firm’s owners in times of prosperity, therefore when a firm issues debt or uses debt to buyback stock (thus increasing leverage), investors may reasonably assume the firm is headed in a good direction and bidding will subsequently increase the firm’s valuation

## Discipline

To avoid default (and bankruptcy) management in a highly levered firm is motivated to perform well – in this way financial leverage acts as a “big brother” sort of regulator keeping managerial decisions in line with the best interest of shareholders

## Flexibility

Increasing financial leverage constrains a firm’s ability to further issue new debt in the future and thus negatively impacts a firm’s financial flexibility to finance future prospects that are presently unknown

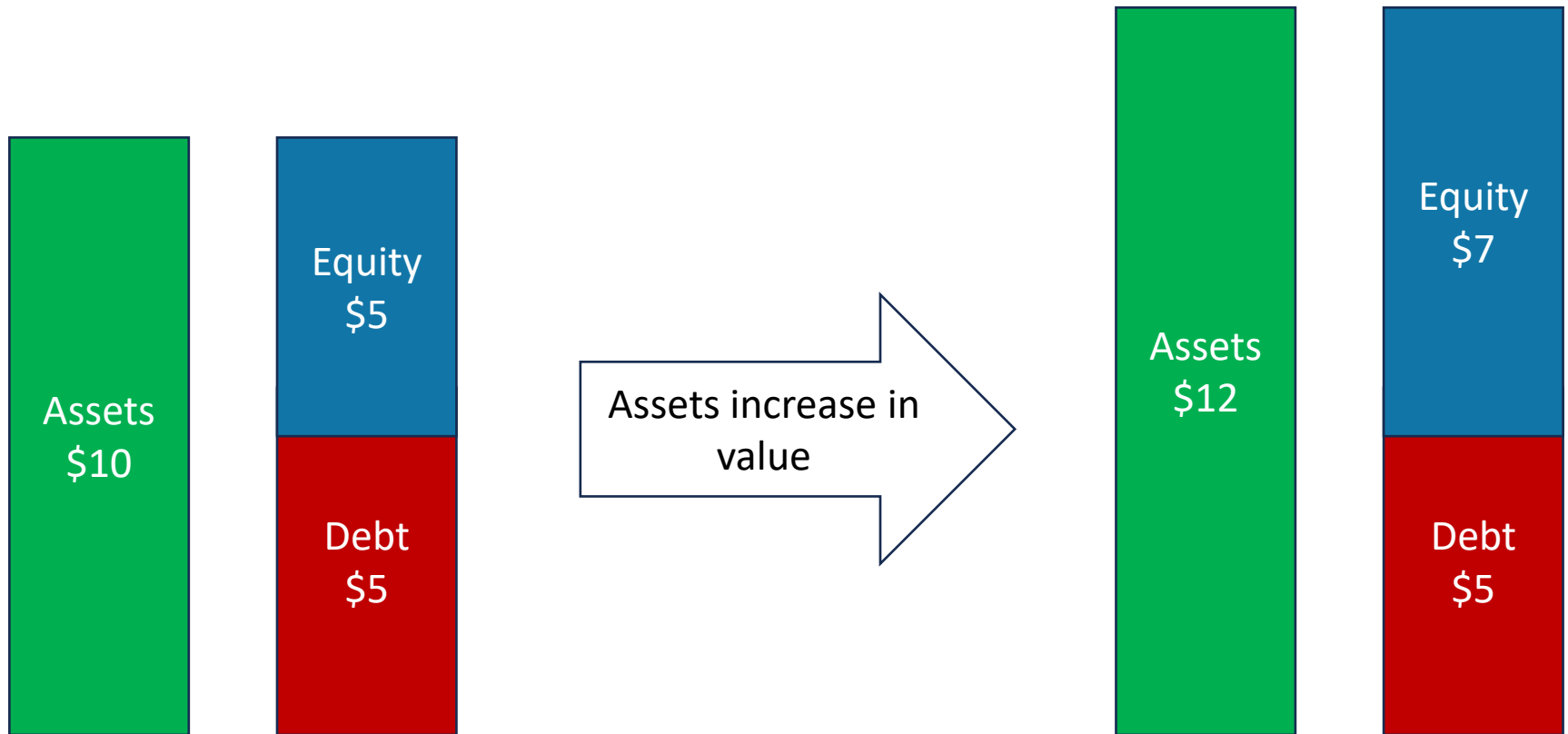
# Tradeoff Theory of Debt Financing

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## Example of Financial Leverage

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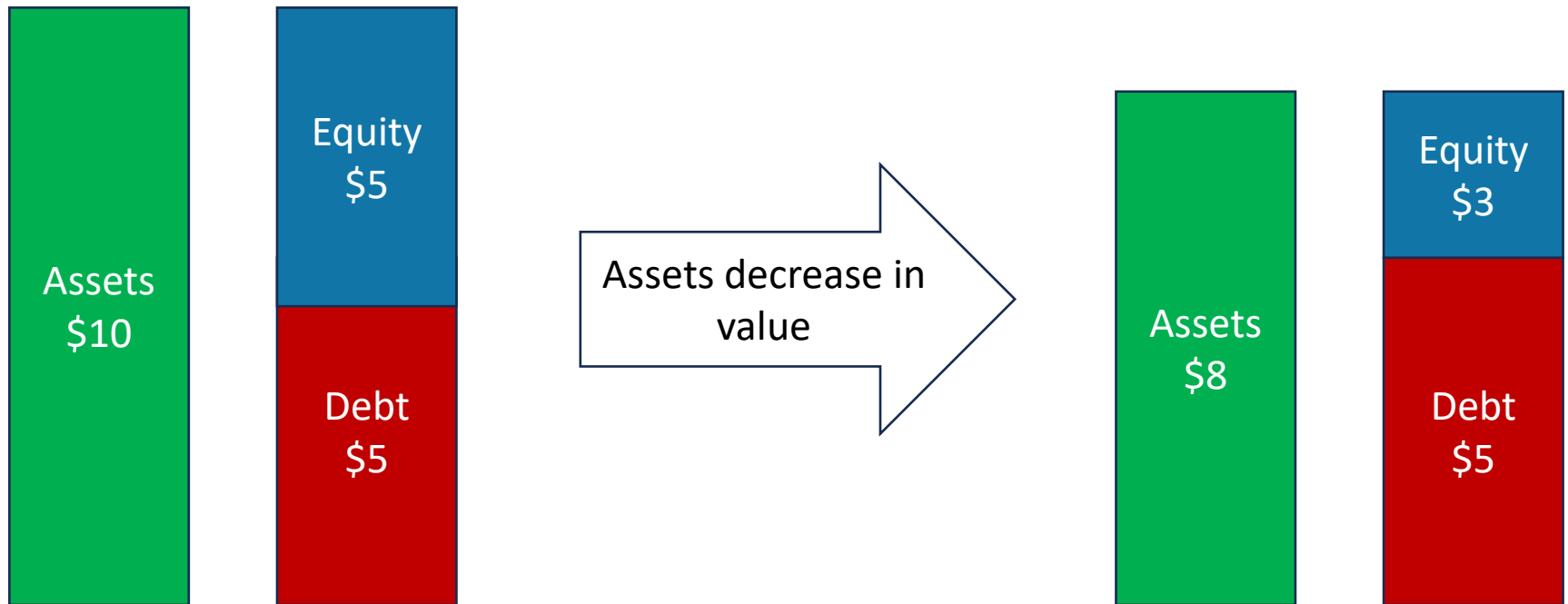


$$\text{Net ROE} = \frac{7}{5}$$

40%

## Example of Financial Leverage

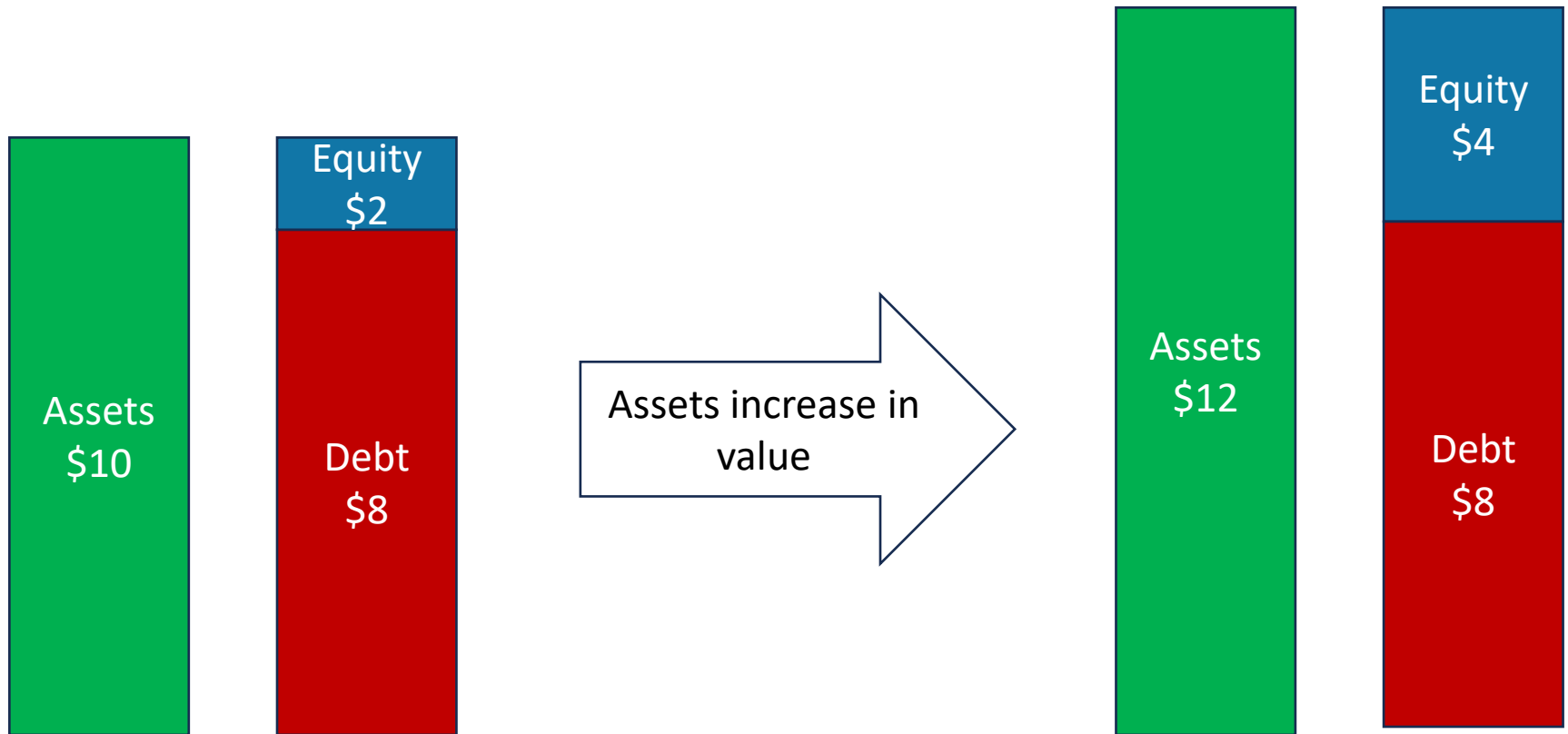
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**Net ROE =  $\frac{3}{5}$   
-40%**

## Example of Financial Leverage

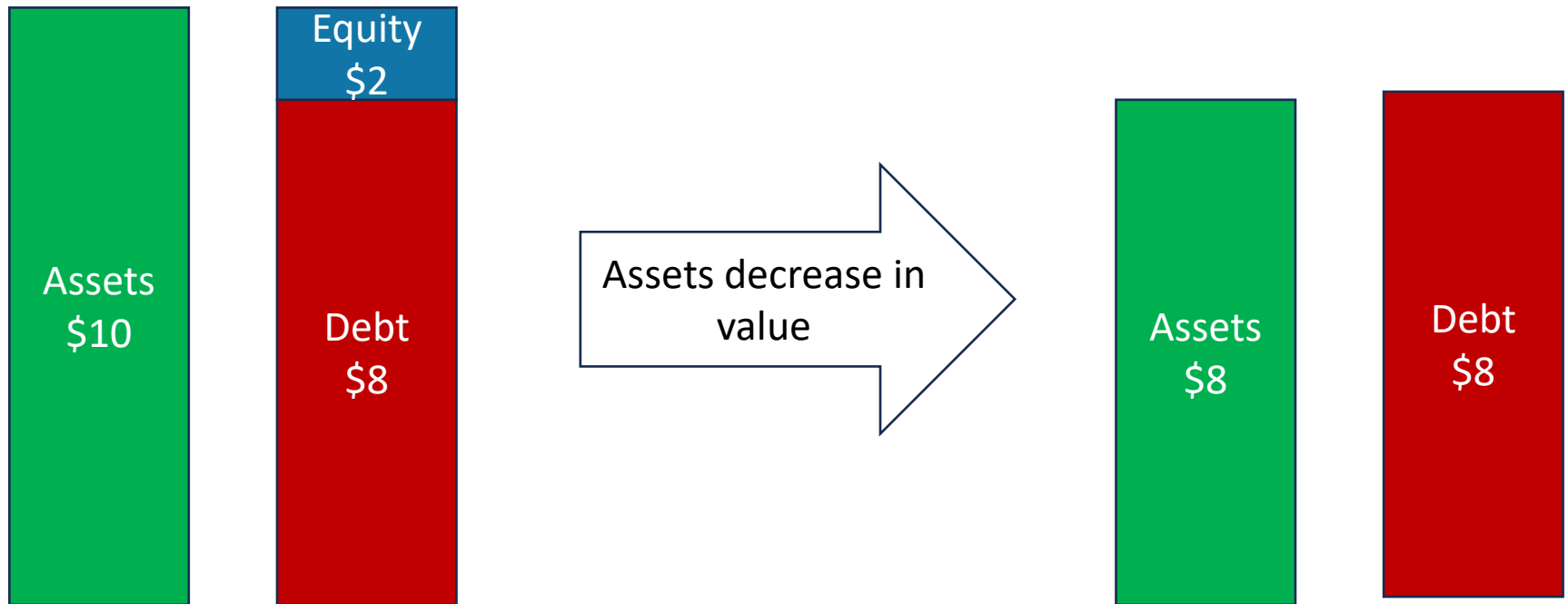
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$$\text{Net ROE} = \frac{4}{2} = 200\%$$

## Example of Financial Leverage

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$$\text{Net ROE} = 0/2$$
$$\infty\%$$

Financial leverage **amplifies** (does not boost) outcomes to the equity holders by increasing volatility.

Private equity firms employ significant amounts of financial leverage when making investments in order to amplify the returns for equity holders (LPs).



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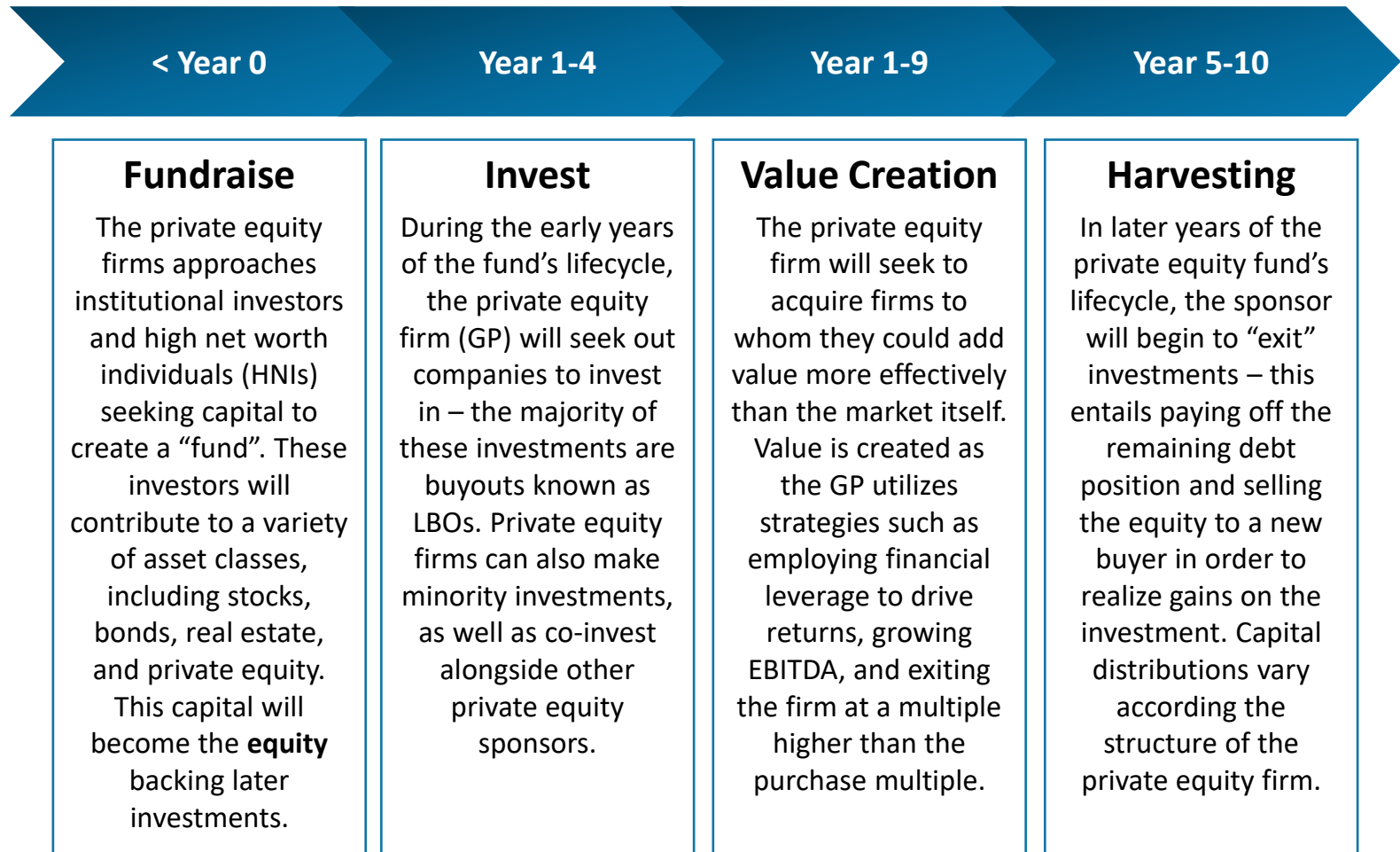
# Leveraged Buyouts Key Terms and Definitions

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LBO	Leveraged Buy Out
Sponsor	Private Equity (PE) Fund
Leverage	Debt
Equity	Sponsor Cash “Down Payment” (non-debt source of cash to finance the deal)
Portfolio Company (“Portco”)	A company that a PE firm owns
IRR	Internal Rate of Return; how we measure returns over various time horizons
Cash on Cash or Multiple of Money	Multiple of invested capital (i.e. = $\frac{\text{Cash Received at Exit}}{\text{Cash Invested}}$ )

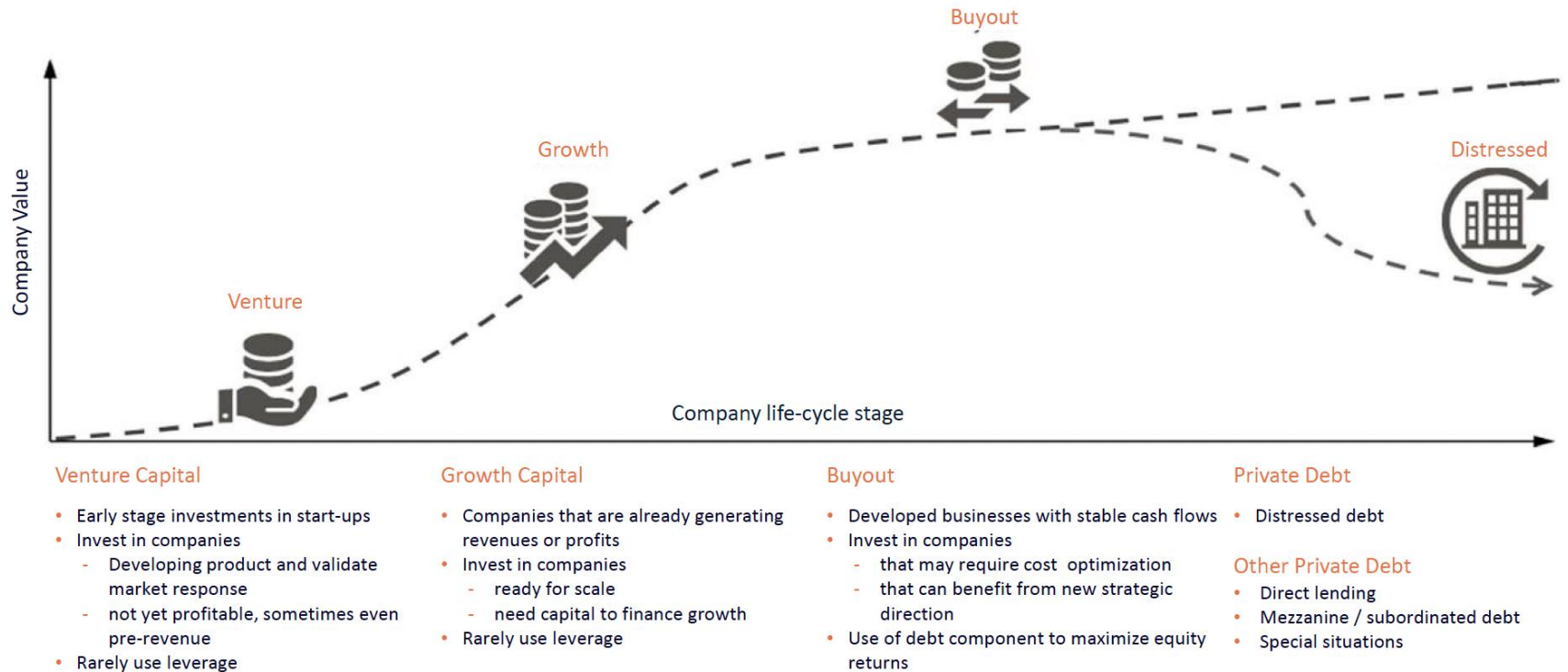
# Private Equity Overview

“Private equity” refers to investors that invest in the equity of private companies ranging from the startup, to growth, to later stages using borrowed capital (debt) and investments from limited partners (equity)



# Private Equity Overview

Key private market strategies per stage of company life cycle



# Private Equity in the Economy

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Private equity is just one of many forms of investment companies, other examples include hedge funds, mutual funds, endowments, pensions, and even retail investors trading stocks from their own homes

## **Public Equity Investors**

**Hedge funds, Mutual Funds, Retail Investors, Endowments,  
Pensions**

## **Private Equity Investors**

**Limited partners such as endowments, pensions, high net  
worth individuals, etc. invest through a private equity  
sponsor known as a GP**

# Private Equity in the Economy

Private equity investing is only available to more specialized and expert level investors – the nature of private equity itself requires less liquidity and longer holding periods in order to realize significant returns

## Public Markets Characteristics

**SEC** mandates release of consistent and reliable information to ensure minimal information asymmetry – this system fosters market liquidity and allows for even the most novice of investors to contribute capital.

**Secondary markets** play a key role in the trading of public equities.

## Private Markets Characteristics

**Private companies** are far less regulated than public companies in the US and are required to disclose almost no information to the public – as such informational asymmetry is high thus fostering a market in which limited liquidity can exist and only sophisticated investor participate.

**Secondary markets** play a small but growing role in private equity.

# Private Equity Key Players

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Private equity firms range drastically in size, ranging from investors that buy a single asset often known as independent sponsors or a “search fund” to “mega funds” that buy large companies off the public markets

KKR

CARLYLE

APOLLO

WARBURG PINCUS

Blackstone



**BlackRock®**

 **THOMABRAVO**

**IBR**

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# Overview of Leveraged Buyouts

Unlike traditional investments, private equity firms **NEVER** plan to hold on to the target company indefinitely

**An LBO is very similar to “home flipping” in real estate**



1. Finds undervalued companies with high return potential
2. Acquires companies with investor equity and debt, not stock
3. Operates and improves the company for a few years
4. Sells the company, repays debt, and targets high IRR on equity invested

\*keep in mind that a leveraged buyout is like buying a house to RENT TO OTHERS and eventually SELL rather than buying a house to live in.

# What is the LBO model

- An LBO model helps determine if buying a company with leverage will be profitable by projecting debt repayment and calculating the investor's internal rate of return (IRR) when they sell the company
- The PE firm must repay the remaining Debt balance when it sells the company, but the benefits of Debt far outweigh this drawback

Leveraged Buyout of Sample Company

(USD in millions, except per share data)

Transaction Assumptions

Current share price	20.00
Offer price premium	30.0%
Offer price per share	26.00
Target diluted shares outstanding	200,000
Offer Value	5,200.0
+ Debt	1,542.0
+ Preferred	0.0
+ Noncontrolling interest	20.0
- Cash & equivalents	(303.8)
Transaction Value	6,458.2

Transaction Multiples

Transaction Value / Sales	1.67x
Transaction Value / EBITDA	8.2x
Transaction Value / EBIT	12.8x
Pro Forma EBITDA	785.0

Target shareholders look for a reasonable premium

Sources

Cash	303.8	4.5%	0.4x
Bank debt	2,355.0	34.7%	3.4x
Subordinated debt	1,570.0	23.1%	5.4x
Sponsor's equity	2,565.2	37.8%	8.7x
Total sources	6,794.0	100.0%	8.7x

Uses

Purchase of equity	5,200.0	76.5%
Refinancing of existing debt	1,542.0	22.7%
Transaction expenses @ 1.0%	52.0	0.8%
Total uses	6,794.0	100.0%

IRR Returns

Year 4	19.1%	Year 5	19.2%	Year 6	18.9%
EBITDA Exit	8.2x	21.9%	21.1%	20.4%	
	8.7x	24.5%	23.0%	21.8%	

Credit stats

Pro Forma	FYE	FYE+1	FYE+2	FYE+3	FYE+4	Lenders review the credit statistics and "debt capacity"		FYE+7	FYE+8
Senior Debt / EBITDA	3.0x	2.5x	2.0x	1.4x	0.9x			0.0x	0.0x
Total Debt / EBITDA	5.0x	4.4x	3.8x	3.1x	2.5x			1.3x	1.2x
EBITDA / Interest	2.6x	2.8x	3.1x	3.6x	4.2x			7.6x	8.1x
EBITDA - CapEx / Interest	2.3x	2.5x	2.8x	3.2x	3.7x	4.5x	5.6x	6.8x	7.3x

Operating Assumptions

Sales growth	NA	3.0%	5.0%	5.0%	5.1%	5.2%	5.3%	5.4%	5.5%	5.6%	5.7%
Cost of goods sold (as a % sales)	64.3%	62.7%	63.2%	63.2%	63.0%	62.8%	62.6%	62.4%	62.2%	62.0%	61.8%
SG&A (as a % sales)	14.2%	15.8%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%

Capital Expenditures Assumptions

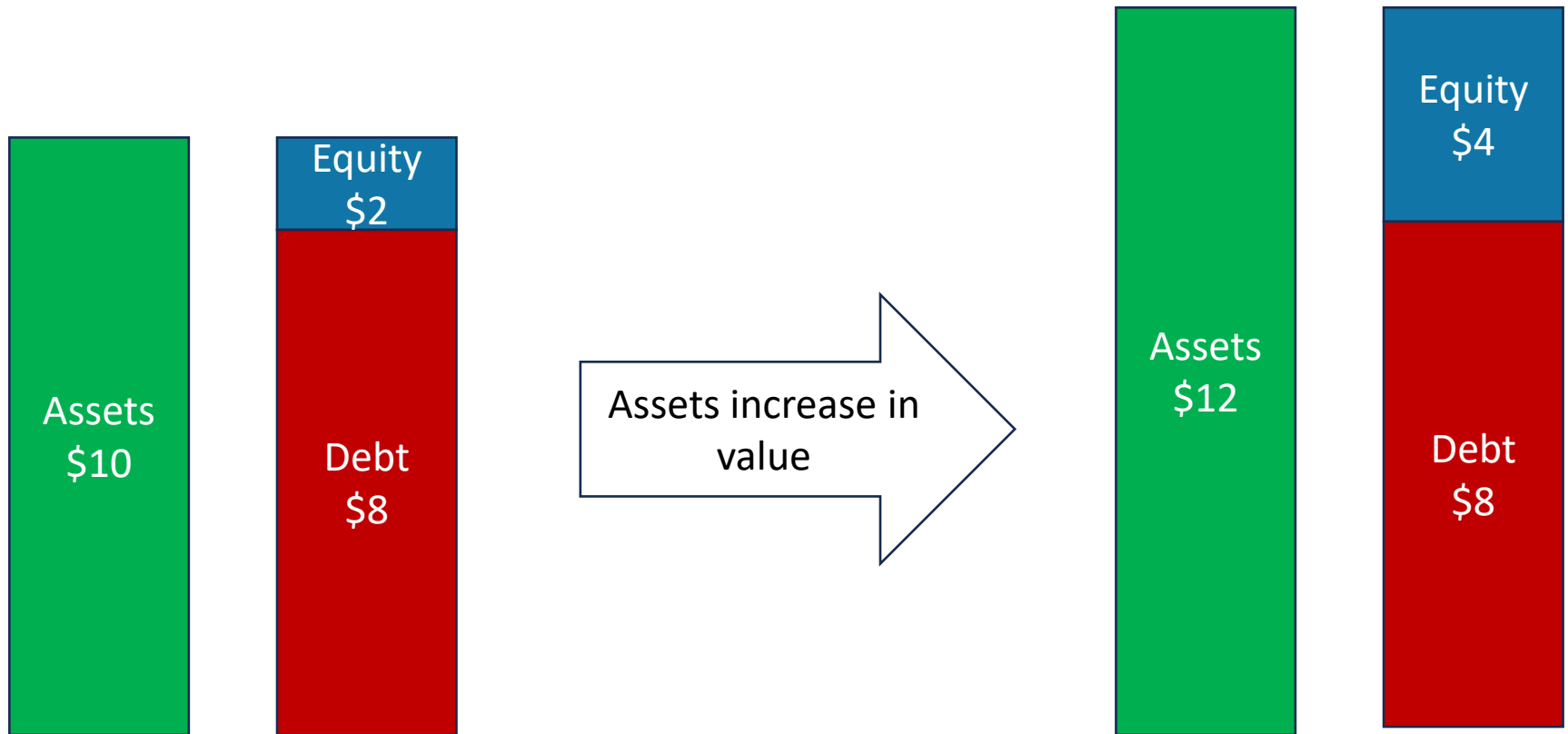
CapEx (as a % sales)	NA	2.5%	1.9%	2.2%	2.2%	Operating improvements driving cash flow				2.2%	2.2%	2.2%
Depreciation (as a % of CapEx)	NA	123.9%	154.2%	147.4%	140.6%				113.5%	106.8%	100.0%	
Additions to intangibles (amount)	NA	170.0	180.0	175.0	175.0				175.0	175.0	175.0	
Amortization (amount)	NA	161.0	168.0	164.5	164.5				164.5	164.5	164.5	

Working Capital Assumptions

Accounts receivable (days collection period)	95.0	84.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1
Accounts payable (days outstanding)	12.9	15.8	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Other current assets (as % of sales)	13.3%	10.4%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%	9.6%
Accrued liabilities (as % of sales)	24.4%	20.3%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%
Other current liabilities (as % of sales)	72.9%	76.1%	72.0%	72.0%	72.0%	72.0%	72.0%	72.0%	72.0%	72.0%	72.0%

## Example of Financial Leverage

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$$\text{Net ROE} = \frac{4}{2} \\ 100\%$$

# Overview of Leveraged Buyouts

PE firms earn a higher IRR if they invest less money upfront but still earn the same cash flows and still sell the asset for the same amount

As a result, PE firms prefer to use as much Debt and as little of their own money as possible

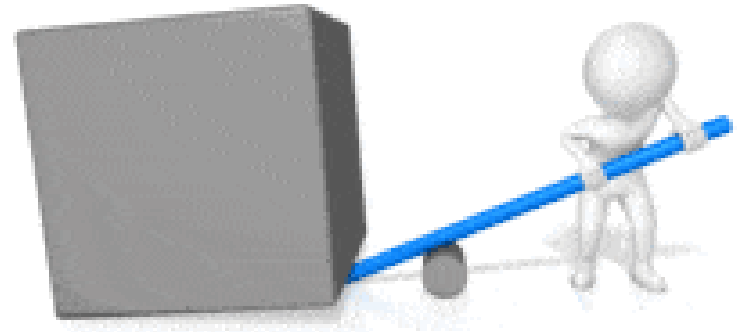
## Advantages of debt

**#1**

It reduces the upfront cost of acquiring a company, making it easier for the PE firm to earn a high IRR.

**#2**

It lets the PE firm use the company's cash flows to repay the Debt and make interest payments.



# Characteristics of a good LBO Candidate

There are multiple criterion used by private equity firms when evaluating investment opportunities. Stability is the major theme! Growth helps, but it's less important than stability.

1

- Strong, predictable cash flows to service the debt while continuing to fund the business

2

- Mature, steady, defensive industry characteristics

3

- Leading market position and or strong brands

4

- Limited capital expenditure and product development requirements

5

- Undervalued (low valuation statistics relative to peers; e.g., P/E or EV/EBITDA multiples)

6

- Owned by a motivated seller

7

- Opportunities for immediate rationalization for the financial sponsor (e.g., margins improvements, working capital improvements, synergies with other portfolio companies)

8

- Viable exit strategies (e.g., IPO or strategic sale)


## Simple mistake

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For the most part, a company's current capital structure **does NOT** affect its viability as a leveraged buyout candidate.



That's because in a leveraged buyout, the company's existing capital structure is **"wiped out"** and replaced with a new capital structure



**Still can matter a bit.** For example, if the company's existing Debt has penalty fees associated with early repayment.

# Comparison exercise: Rank them

---

## Under Armour

- **EBITDA:** \$158M; 4% margin
- **Free Cash Flow:** Increased from (\$52M) to \$516M and then fell to \$244M
- **Valuation:** 29.1x TEV / EBITDA



## Foot Locker

- **EBITDA:** \$544M; 7% margin
- **Free Cash Flow:** Grew from \$285M to \$864M over the past 3 years
- **Valuation:** 5.1x TEV / EBITDA



## American Eagle:

- **EBITDA:** \$174M; 5% margin
- **Free Cash Flow:** Fell from \$176M to \$96M over the past 3 years
- **Valuation:** 9.6x TEV / EBITDA



# Comparison exercise: Rank them

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3

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2

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- **Free Cash Flow:** Fell from \$176M to \$96M over the past 3 years
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# Characteristics of a good LBO Candidate

There are multiple criterion used by private equity firms when evaluating investment opportunities. Many successful LBOs in the past have had some or all of the following attributes:

Aspect of Company:	Ideal LBO Candidate:	Non-Ideal LBO Candidate:
<b>Income Statement:</b>	Low fixed costs, high recurring revenue, relatively high EBITDA margins; revenue <i>growth</i> not necessarily essential.	The opposite; a pre-revenue tech or biotech startup would be the single worst possible LBO candidate due to lack of revenue, extremely high risk, etc.
<b>Balance Sheet:</b>	Significant fixed assets such as PP&E for use as debt collateral.	Fewer fixed assets that can be used as debt collateral.
<b>Cash Flow Statement:</b>	<b>Stable cash flows</b> above all else! Need them for interest and debt principal repayment. Minimal CapEx is ideal (e.g., mature company with lots of assets, but not spending much on new assets). Minimal Working Capital requirements also help, but tend to matter less.	Unstable cash flows and a high amount of CapEx (20-30% of revenue is quite high for most industries), especially if it's Maintenance CapEx rather than Growth CapEx; companies that require a lot of cash outlays for Working Capital (e.g., retailers with inventory) are also not ideal.
<b>Valuation:</b>	Lower to mid-range EBITDA multiple (varies wildly based on the industry - need to look at comps to determine this).	Moderate to high EBITDA multiple - creates a lot of risk for the PE firm if that multiple declines.
<b>Exit Strategies:</b>	Ideally, a sale to a "strategic" (normal company); sale to another private equity firm or an IPO could also work; dividend recap or leveraged recap are less than ideal.	Unlikely to sell the company or take it public (e.g., a smaller private company in a niche market), so dividend recaps or leveraged recaps become more necessary.
<b>Key Drivers of Returns:</b>	Mostly from EBITDA Growth and/or Debt Paydown.	Minimal EBITDA Growth and Debt Paydown, so returns are highly dependent on Multiple Expansion.
<b>Targeted IRR:</b>	20-25% even in reasonable Base cases and avoid losing money in Downside cases; growth equity funds may focus on MoM multiples instead.	Tough to achieve 20-25% IRR unless assumptions are extremely optimistic, with a serious chance of losing money in the Downside cases.

### 3. What variables impact an LBO model the most?

Purchase and exit multiples have the biggest impact on the returns of a model. After that, the amount of leverage (debt) used also has a significant impact, followed by operational characteristics such as revenue growth and EBITDA margins.

**6. How do you use an LBO model to value a company, and why do we sometimes say that it sets the “floor valuation” for the company?**

You use it to value a company by setting a targeted IRR (for example, 25%) and then back-solving in Excel to determine what purchase price the PE firm could pay to achieve that IRR.

This is sometimes called a “floor valuation” because PE firms almost always pay less for a company than strategic acquirers would.

# Value Creation in Leveraged Buyouts

Shareholder value is created in a leveraged buyout by pulling on any combination of 3 levers: financial leverage, growth in EBITDA, and multiples arbitrage

## Financial Leverage

Financial leverage (debt) is used to “concentrate” returns the equity holders in an LBO. Prudent usage of leverage has strong potential to increase IRR and MOIC.

## Operational Improvements

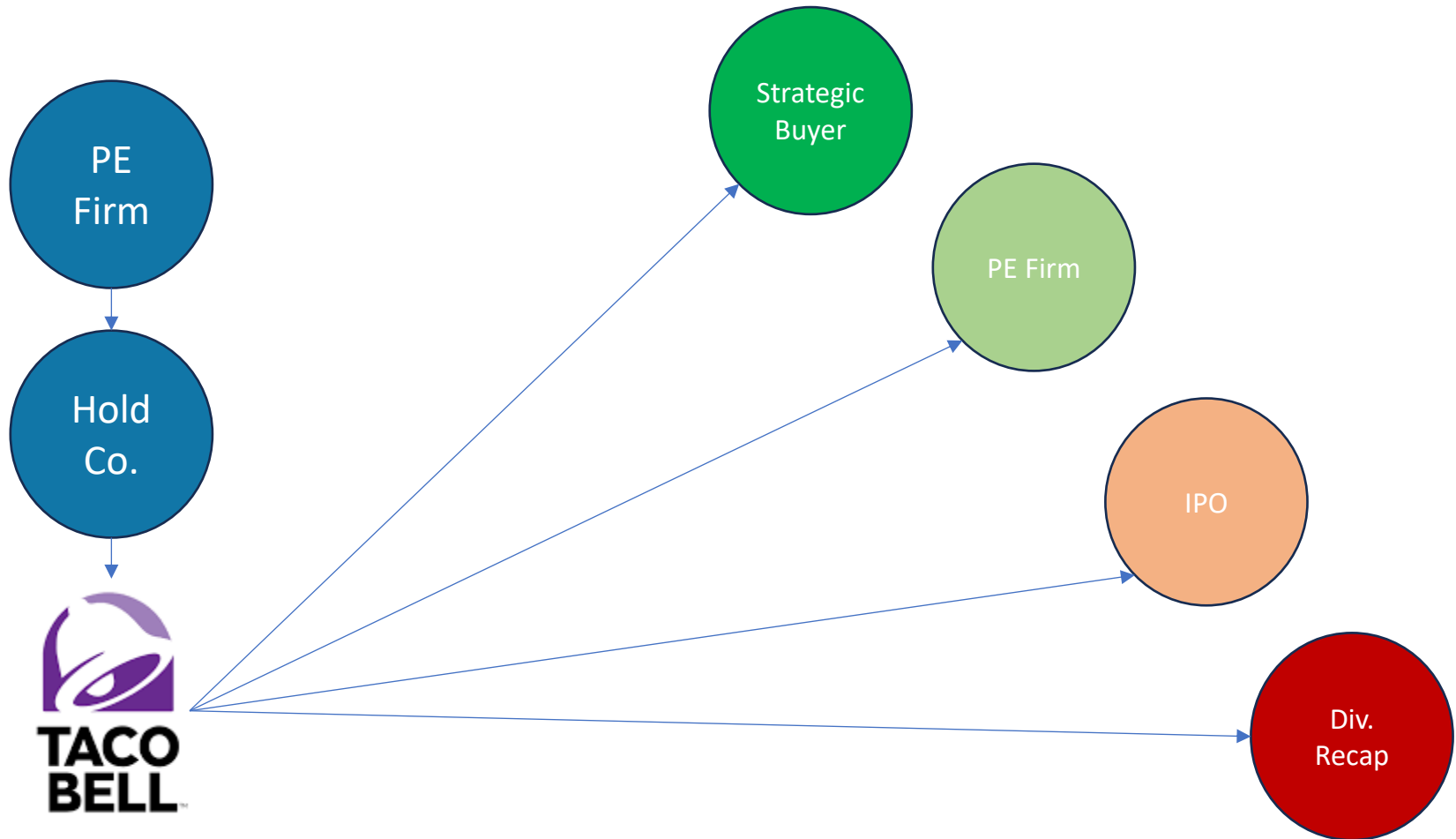
The LBO target is often purchased and sold based off an EBITDA multiple, thus increasing operational profitability drives an increase in EV and equity value.

## Multiple Arbitrage

Selling the LBO target at a higher price than it was purchased for on a per-unit basis further contributes to increases in EV.

# Exiting a Private Equity Investment

After holding a company for 3-7 years, a PE firm will often seek to “exit” their investment – sell to another PE firm, strategic buyer, the public market, or perform a dividend recapitalization in search of high FCFE



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# What is a paper LBO?

- A paper LBO is a highly simplified LBO model completed using pen and paper only
- Typically takes 5-10 minutes to complete
- You have to rely on mental math, you will not be allowed a calculator

(\$ in millions)		Year					
		1	2	3	4	5	6
Sales revenue		\$100	\$110	\$121	\$133	\$146	\$161
EBITDA		40	44	48	53	59	64
Less: D&A		(20)	(20)	(20)	(20)	(20)	(20)
EBIT		20	24	28	33	39	44
Less: Interest expense		(12)	(12)	(12)	(12)	(12)	(12)
EBT		8	12	16	21	27	32
Less: Taxes		(3)	(5)	(7)	(8)	(11)	(13)
<b>EBT (Tax-effected)</b>		<b>\$5</b>	<b>\$7</b>	<b>\$10</b>	<b>\$13</b>	<b>\$16</b>	<b>\$19</b>
EBT (Tax-effected)		\$5	\$7	\$10	\$13	\$16	
Plus: D&A (non-cash expense)		20	20	20	20	20	
Less: capital expenditures		(15)	(17)	(18)	(20)	(22)	
Less: Increase in net working capital		(5)	(5)	(5)	(5)	(5)	
<b>Free cash flow (FCF)</b>		<b>\$5</b>	<b>\$6</b>	<b>\$7</b>	<b>\$8</b>	<b>\$9</b>	
Revenue Growth			10%	10%	10%	10%	10%
EBITDA Margin		40%	40%	40%	40%	40%	40%
Tax rate		40%	40%	40%	40%	40%	40%
Capex		15%	15%	15%	15%	15%	15%

Entry Assumptions				
Entry multiple	5.0x		FTM EBITDA (Year 6)	64
EBITDA (Year 1)	\$40		Exit Multiple	5.0x
Price paid	\$200		Ending TEV	322
Interest rate	10%		Beginning debt	120
			Cash generated (total FCF)	34
			Ending debt	86
Debt	60%	\$120	Ending equity value	236
Equity	40%	80	Beginning equity value	80
<b>Total</b>	<b>100%</b>	<b>\$200</b>	<b>Approximate EV Multiple</b>	<b>3.0x</b>
			<b>IRR</b>	<b>&gt; 25%</b>

Approximation		
	<u>MoM</u>	<u>IRR</u>
	2.0x	15%
	2.5x	20%
	3.0x	25%

# How is the paper LBO presented?

- Starting off, the interviewee typically receives a “prompt” – a short description containing a situational overview and certain financial data for a hypothetical company contemplating an LBO
- The interviewee will be given a pen and paper and between 5 and 10 minutes to arrive at the implied **internal rate of return (IRR)** and **multiple on invested capital (MOIC)**
- You will then walk through your work with the interviewer

(\$ in millions)						
	Year					
	1	2	3	4	5	6
Sales revenue	\$100	\$110	\$121	\$133	\$146	\$161
EBITDA	40	44	48	53	59	64
Less: D&A	(20)	(20)	(20)	(20)	(20)	(20)
EBIT	20	24	28	33	39	44
Less: Interest expense	(12)	(12)	(12)	(12)	(12)	(12)
EBT	8	12	16	21	27	32
Less: Taxes	(3)	(5)	(7)	(8)	(11)	(13)
<b>EBT (Tax-effected)</b>	<b>\$5</b>	<b>\$7</b>	<b>\$10</b>	<b>\$13</b>	<b>\$16</b>	<b>\$19</b>
EBT (Tax-effected)	\$5	\$7	\$10	\$13	\$16	
Plus: D&A (non-cash expense)	20	20	20	20	20	
Less: capital expenditures	(15)	(17)	(18)	(20)	(22)	
Less: Increase in net working capital	(5)	(5)	(5)	(5)	(5)	
<b>Free cash flow (FCF)</b>	<b>\$5</b>	<b>\$6</b>	<b>\$7</b>	<b>\$8</b>	<b>\$9</b>	
Revenue Growth		10%	10%	10%	10%	10%
EBITDA Margin	40%	40%	40%	40%	40%	40%
Tax rate	40%	40%	40%	40%	40%	40%
Capex	15%	15%	15%	15%	15%	15%

Entry Assumptions				
Entry multiple	5.0x		FTM EBITDA (Year 6)	64
EBITDA (Year 1)	\$40		Exit Multiple	5.0x
Price paid	\$200		Ending TEV	322
Interest rate	10%		Beginning debt	120
			Cash generated (total FCF)	34
			Ending debt	86
Debt	60%	\$120	Ending equity value	236
Equity	40%	80	Beginning equity value	80
<b>Total</b>	<b>100%</b>	<b>\$200</b>	<b>Approximate EV Multiple</b>	<b>3.0x</b>
			<b>IRR</b>	<b>&gt; 25%</b>

Approximation		
	MoM	IRR
2.0x		15%
2.5x		20%
3.0x		25%



# Review of IRR and MOIC

## IRR

(Internal rate of return)

- Widely used in PE/VC, which involves multiple cash investments over the life of a business and a cash flow at the end through an IPO or sale of the business
- Unlike CAGR, IRR considers the time value of money

SOLVE THE IRR TO MAKE THE NET PRESENT VALUE ZERO

VALUE OF ALL FUTURE CASHFLOWS REINVESTED @ THE IRR

$$\text{NPV (0)} = \frac{\text{Cashflow}_1}{(1 + \text{IRR})^1} + \frac{\text{Cashflow}_2}{(1 + \text{IRR})^2} + \frac{\text{Cashflow}_n}{(1 + \text{IRR})^n} - \text{Initial investment}$$

WHAT YOU PAID FOR INITIAL INVESTMENT

## MOIC

(Multiple on invested capital)

- Measures how much an investment returns relative to the initial investment
- If you invest \$1 million and receive \$3 million in return, the MOIC is 3.0x
- Doesn't factor in time, so it's often used with IRR to provide a fuller picture of performance

$$\text{Multiple on Invested Capital (MOIC)} = \frac{\text{Total Cash Inflows}}{\text{Total Cash Outflows}}$$

# IRR

Year	Cash Flow
0	-100,000 + 9,091 + 8,264 + 7,513 + 6,830 + 68,301 = 0
1	10,000
2	10,000
3	10,000
4	10,000
5	110,000

IRR 10%

NPV @ ?% 0

# How to remember IRR

## Rule of 72 (and 114... and 144)

- **Rule of 72** stipulates that the approximate return required to double an investment can be calculated by dividing *(72 / The Number of Years)*
  - E.g. What is the IRR of an investment that doubles in 5 years?  
 $(72 / 5) = 14\%$ , so the IRR is ~14%
- **Rule of 114** is for **3x** and **Rule of 144** is for **4x**

		Many Paper LBOs are 5 Years									
		Implied from Rule of #									
	Target MoM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Rule of 72	2.0x	72%	36%	24%	18%	14%	12%	10%	9%	8%	7%
Rule of 114	3.0x	114%	57%	38%	29%	23%	19%	16%	14%	13%	11%
Rule of 144	4.0x	144%	72%	48%	36%	29%	24%	21%	18%	16%	14%

		Actual IRR									
	Target MoM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2.0x	100%	41%	26%	19%	15%	12%	10%	9%	8%	7%
	3.0x	200%	73%	44%	32%	25%	20%	17%	15%	13%	12%
	4.0x	300%	100%	59%	41%	32%	26%	22%	19%	17%	15%

# How to remember IRR

---

IRR	Exit Year for Investment				
	3	4	5	6	7
1.0x	0%	0%	0%	0%	0%
2.0x	26%	19%	15%	12%	10%
3.0x	44%	32%	25%	20%	17%
4.0x	59%	41%	32%	26%	22%
5.0x	71%	50%	38%	31%	26%

MOIC

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns (MOIC and IRR)

# Paper LBO Example

## Step 1

- Write down key assumptions of the prompt and clarify

### ***Paper LBO Prompt Example***

*JoeCo, a coffee company, has generated \$100mm in last twelve months (LTM) revenue and this figure is expected to increase by a growth rate of 10% annually into the foreseeable future.*

*JoeCo's LTM EBITDA was \$50mm, and its EBITDA margin should remain unchanged in the years ahead.*

*Based upon management guidance, JoeCo's depreciation and amortization (D&A) and its capital expenditures (Capex) is expected to be 5.0% as a percentage of revenue, with no change in net working capital (NWC), and the effective tax rate fixed at 25%.*

*If a PE firm acquired JoeCo for 10.0x EBITDA and exited at the same multiple five years later, what is the implied internal rate of return (IRR) and multiple on invested capital (MOIC)?*

*For the financing of the LBO, assume the initial leverage ratio used to fund the purchase was 6.0x EBITDA and that the debt carries an interest rate of 8.0% with no required principal amortization until maturity, at which debt is fully paid down upon exit.*

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns

# Paper LBO Example

## Step 2

- Calculate the purchase price

	A	B	C	D	E	F	G	H
1								
2		<b>Paper LBO Model</b>						
3		(\$ in millions)						
4								
5		<b>Entry Valuation</b>				<b>Operating Assumptions</b>		
6		LTM EBITDA		\$50		LTM Revenue		\$100
7		(x) Entry Multiple		10.0x		Annual Revenue Growth (%)		10.0%
8		Purchase Enterprise Value (TEV)		\$500		EBITDA Margin (%)		50.0%
9						D&A % of Revenue		5.0%
10						Capex % of Revenue		5.0%
11						Δ in Net Working Capital (NWC)		--
12						Leverage Ratio		6.0x
13						Interest Rate (%)		8.0%
14						Tax Rate (%)		25.0%



# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns

# Paper LBO Example

## Step 3

- Calculate the debt & equity funding amounts used for purchase

	A	B	C	D	E	F	G	H
15								
16		<b>Sources and Uses of Funds</b>						
17		<b>Sources</b>				<b>Uses</b>		
18		Initial LBO Debt		\$300		Purchase Enterprise Value (TEV)		\$500
19		Sponsor Equity		200				
20		Total Sources		\$500		Total Uses		\$500
21								

**Debt Financing = Leverage Multiple × LTM EBITDA**

**Sponsor Equity = Total Uses – Debt Financing**

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns

# Paper LBO Example

## Step 4

- Build the income statement

	A	B	C	D	E	F	G	H	
21									
22		Financial Forecast			Year 1	Year 2	Year 3	Year 4	Year 5
23		Revenue		\$110	\$120	\$130	\$145	\$160	
24									
25		EBITDA		\$55	\$60	\$65	\$75	\$80	
26		(-) D&A		(5)	(5)	(5)	(5)	(10)	
27		EBIT		\$50	\$55	\$60	\$70	\$70	
28		(-) Interest Expense		(25)	(25)	(25)	(25)	(25)	
29		EBT		\$25	\$30	\$35	\$45	\$45	
30		(-) Taxes		(5)	(10)	(10)	(10)	(10)	
31		Net Income		\$20	\$20	\$25	\$35	\$35	

**Revenue** = Prior Period Revenue ×  
(1 + Annual Revenue Growth Rate)

**EBITDA** = EBITDA Margin % ×  
Current Period Revenue

**D&A** = D&A % of Revenue ×  
Current Period Revenue

**Interest Expense** = Debt Financing  
Amount × Interest Rate %

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns

# Paper LBO Example

## Step 5

- Calculate cumulative levered free cash flow

	A	B	C	D	E	F	G	H
32								
33		<b>Free Cash Flow</b>		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
34		Net Income		\$20	\$20	\$25	\$35	\$35
35		(+) D&A		5	5	5	5	10
36		(-) Capex		(5)	(5)	(5)	(5)	(10)
37		(-) $\Delta$ in NWC		--	--	--	--	--
38		<b>Free Cash Flow (FCF)</b>		<b>\$20</b>	<b>\$20</b>	<b>\$25</b>	<b>\$35</b>	<b>\$35</b>
39								

**Free Cash Flow (FCF) = Net Income + D&A – Capex – Change in NWC**

\*FCF = CFO - Capex

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

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Step 3

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Step 4

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Step 5

- Calculate cumulative levered free cash flow

Step 6

- Calculate ending purchase price and returns

# Paper LBO Example

## Step 6

- Calculate ending purchase price and returns

	A	B	C	D	E	F	G	H
39								
40		<b>Exit Valuation</b>				<b>Return Metrics</b>		
41		Exit EBITDA (Year 5)		\$80		Multiple on Invested Capital (MOIC)		3.2x
42		(x) Exit Multiple		10.0x		Internal Rate of Return (IRR)		26.0%
43		Exit Enterprise Value (TEV)		\$800				
44								
45		Initial LBO Debt		\$300				
46		(-) Cumulative FCF		(135)				
47		Ending Net Debt		\$165				
48								
49		Exit Equity Value		\$635				

**Exit Enterprise Value (TEV)** = Exit Year EBITDA × Exit Multiple

**Cumulative FCFs** =  $\Sigma$  Free Cash Flows (FCFs)

**Final Year Net Debt** = Initial Debt Amount – Cumulative FCFs

**Exit Equity Value** = Exit Enterprise Value – Ending Year Net Debt

**MOIC** = Exit Equity Value ÷ Initial Sponsor Equity

**Internal Rate of Return (IRR)** = memorized answer



# You're on your own

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# Paper LBO Example

## Given LBO Parameters and Assumptions

- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.

# Paper LBO Example

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- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.
- The debt-to-equity ratio for the LBO acquisition will be 70:30.

# Paper LBO Example

## Given LBO Parameters and Assumptions

- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.
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- Assume the interest rate on debt to be 10%.

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- ABC expects to reach \$100 million in sales revenue with an EBITDA margin of 30% in Year 1.

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- EBITDA margins are expected to remain flat during the term of the investment.
- Capital expenditures are expected to equal 10% of sales each year.



# Paper LBO Example

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- Revenue is expected to increase by 10% year-over-year (y-o-y).
- EBITDA margins are expected to remain flat during the term of the investment.
- Capital expenditures are expected to equal 10% of sales each year.
- Operating working capital is expected to increase by \$2 million each year.

# Paper LBO Example

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- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.
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- Depreciation is expected to equal \$15 million each year.

# Paper LBO Example

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- Capital expenditures are expected to equal 10% of sales each year.
- Operating working capital is expected to increase by \$2 million each year.
- Depreciation is expected to equal \$15 million each year.
- Assume a constant tax rate of 40%.

# Paper LBO Example

## Given LBO Parameters and Assumptions

- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.
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- Capital expenditures are expected to equal 10% of sales each year.
- Operating working capital is expected to increase by \$2 million each year.
- Depreciation is expected to equal \$15 million each year.
- Assume a constant tax rate of 40%.
- XYZ exits the target investment after Year 5 at a 7x (FTM) EBITDA multiple used at entry

# Paper LBO Example

## Given LBO Parameters and Assumptions

- XYZ Private Equity Partners purchases ABC Target Company for **6x Forward 12 months (FTM) EBITDA** at the end of Year 0.
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- Revenue is expected to increase by 10% year-over-year (y-o-y).
- EBITDA margins are expected to remain flat during the term of the investment.
- Capital expenditures are expected to equal 10% of sales each year.
- Operating working capital is expected to increase by \$2 million each year.
- Depreciation is expected to equal \$15 million each year.
- Assume a constant tax rate of 40%.
- XYZ exits the target investment after Year 5 at a 7x (FTM) EBITDA multiple used at entry
- Assume all debt pay-down occurs at the moment of sale at the end of Year 5

# Steps to solving a paper LBO

---

Step 1

- Write down key assumptions of the prompt and clarify

Step 2

- Calculate the purchase price

Step 3

- Calculate the debt & equity funding amounts used for purchase

Step 4

- Build the income statement

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- Calculate cumulative levered free cash flow

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# Solution

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# Solution

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# Table of Contents

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**Review of Financial Leverage**

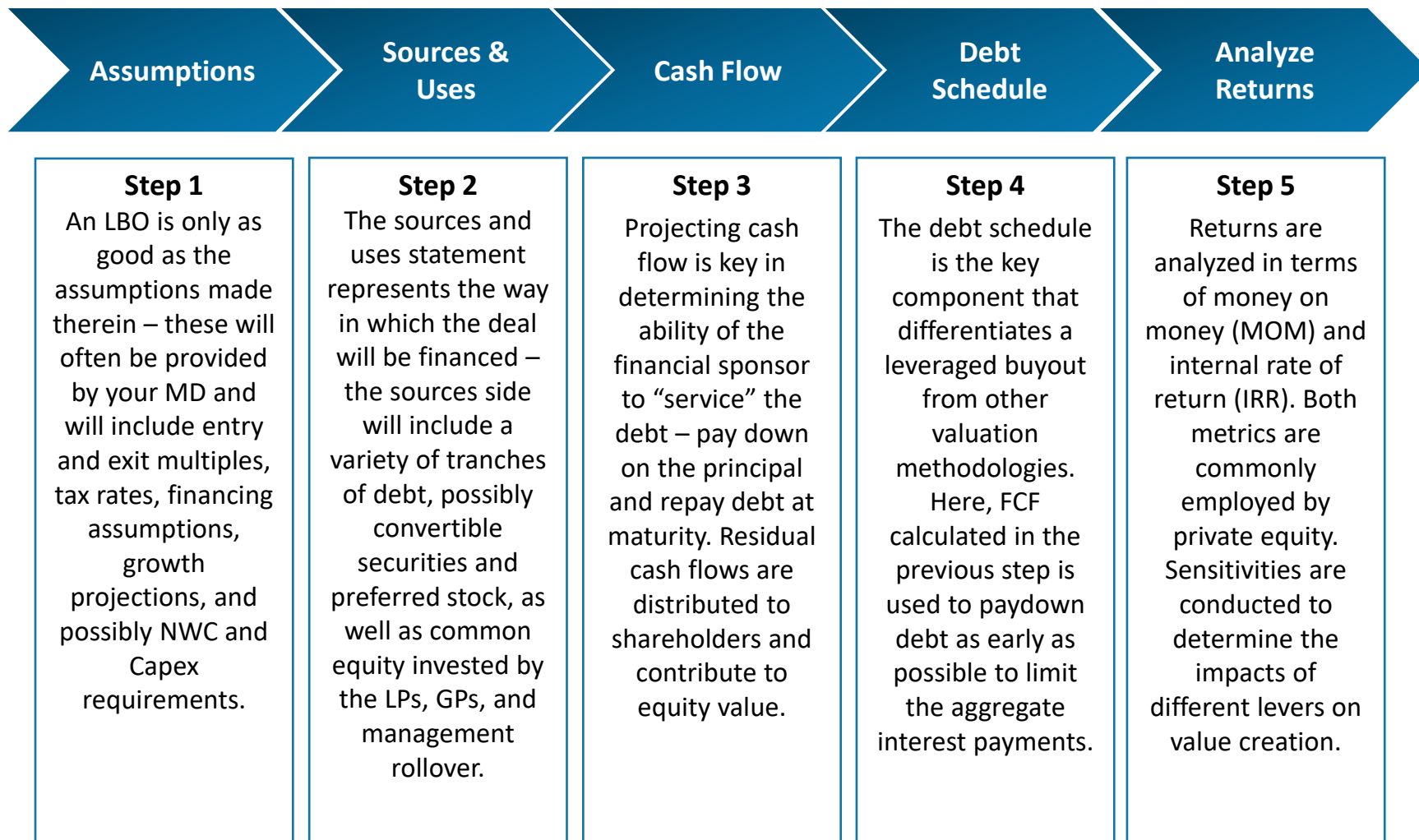
**Overview of Private Equity**

**Overview of Leveraged Buyouts**

**Paper LBO and LBO Practice**

**Leveraged Buyout Valuation**

# Walk me Through an LBO



# Step 1: Transaction Assumptions

An LBO is only as good as the assumptions made therein – these will often be provided by your MD and will include information regarding entry multiples, leverage constraints, financing information, etc.

Summary	
Company name	NIKE, Inc.
Ticker	NKE
Share price as of last close	\$85.25
Latest closing share price date	8/29/19
Latest fiscal year end date	5/31/19
Circularity	On
Revolver Compliance Check	Compliant
Sponsor IRR	9.7%
Sponsor MoM	1.6x

Key Assumptions	
Entry Multiple	25.0x
Exit Multiple	25.0x
Max Leverage	7.5x
Minimum Cash Balance	\$2,000
Management Rollover	\$5,000
Transaction Fees	\$90

## Step 1: Transaction Assumptions (Entry Valuation)

Entry valuation in an LBO is often determined with an EBITDA multiple – both the EV and the equity value are important in determining the financing of the transaction, but ultimately equity value determines returns

Entry Valuation	
EBITDA @ Acquisition	\$5,492
EBITDA Multiple	25.0x
<b>Enterprise Value</b>	<b>\$137,300</b>
(-) Total Debt	(3,470)
(+) Cash	4,663
<b>Equity Value</b>	<b>\$138,493</b>
Fully Diluted Shares Outstanding	1,587
<b>Offer Price per Share</b>	<b>\$87.29</b>
<i>% Premium / (Discount) to Current Price</i>	<i>2.4%</i>

# Step 1: Transaction Assumptions (Access to Capital Markets)

Leveraged buyouts can only be undertaken so long as the sponsor can raise enough capital at favorable terms – the costs of debt financing are especially relevant in determining cash flow generation and value creation

Financing Assumptions									
<u>Tranche</u>	<u>Max Facility</u>	<u>\$</u>	<u>Max X of EBITDA</u>	<u>Spread / Coupon / Dividend</u>	<u>Floor</u>	<u>PIK Rate</u>	<u>OID</u>	<u>Tenor</u>	<u>Fee %</u> <u>Fee &amp; OID \$</u>
Revolver	\$7,500	--	--	L + 400	1.0%			5 yrs	1.00% \$75
Term Loan		24,714	4.50x	L + 450	1.0%		99.0	5 yrs	1.00% 494
Subordinated Debt		8,238	1.50x	8.125%			98.0	7 yrs	2.00% 330
Mezzanine Financing		6,865	1.25x	9.000%		2.125%		8 yrs	3.00% 206
Preferred Stock		1,373	1.25x	10.000%		5.000%			2.00% 27
<b>Total Debt</b>		<b>\$41,190</b>							
<b>Leverage Ratio</b>		<b>7.5x</b>							

## Step 2: Sources and Uses

The sources and uses table is used to represent the way in which the acquisition will be financed, which ultimately assists in the construction of the cap table; the uses side displays the treatment of both EV and equity value

Uses	\$	%
Equity Purchase Price	\$138,493	96.7%
Refinance Debt	3,470	2.4%
Financing Fees & OID	1,105	0.8%
Transaction Fees	117	0.1%

<b>Total Uses</b>	<b>\$143,185</b>	<b>100%</b>
-------------------	------------------	-------------

Sources	X	\$	%
Excess Cash		\$2,663	1.9%
Revolver	--	--	--
Term Loan	4.50x	24,714	17.3%
Subordinated Debt	1.50x	8,238	5.8%
Mezzanine Financing	1.25x	6,865	4.8%
Preferred Stock	0.25x	1,373	1.0%
Mgmt Rollover		5,000	3.5%
Sponsor Equity		94,332	65.9%
<b>Total Sources</b>		<b>\$143,185</b>	<b>100%</b>

## Step 3: Cash Flow Projections (P&L)

Projecting cash flow requires an understanding the income statement as well as the statement of cash flows – recall that the FCF used in servicing debt in the LBO model is CFO – Capex

	Income Statement							
	2017A	2018A	2019A	2020P	2021P	2022P	2023P	2024P
Revenue	\$34,350	\$36,397	\$39,117	\$42,051	\$45,205	\$48,595	\$52,240	\$56,158
COGS	19,038	20,441	21,643	23,254	24,998	26,873	28,888	31,055
<b>Gross Profit</b>	<b>\$15,312</b>	<b>\$15,956</b>	<b>\$17,474</b>	<b>\$18,797</b>	<b>\$20,206</b>	<b>\$21,722</b>	<b>\$23,351</b>	<b>\$25,102</b>
Demand creation	3,341	3,577	3,753	4,030	4,333	4,658	5,007	5,382
Operating overhead	6,506	7,160	8,229	8,837	9,500	10,212	10,978	11,802
Total SG&A (less depreciation)	\$9,847	\$10,737	\$11,982	\$12,868	\$13,833	\$14,870	\$15,985	\$17,184
<b>EBITDA</b>	<b>\$5,465</b>	<b>\$5,219</b>	<b>\$5,492</b>	<b>\$5,929</b>	<b>\$6,374</b>	<b>\$6,852</b>	<b>\$7,366</b>	<b>\$7,918</b>
Depreciation				724	866	1,018	1,181	1,356
Amortization				15	15	15	15	15
EBIT				\$5,190	\$5,493	\$5,819	\$6,170	\$6,547
Net interest expense				3,300	3,223	3,161	3,095	3,005
Other expense (income)				--	--	--	--	--
Pre-tax income				1,890	2,270	2,659	3,075	3,542
Taxes				488	624	933	1,061	1,197
<b>Net Income</b>				<b>\$1,402</b>	<b>\$1,646</b>	<b>\$1,726</b>	<b>\$2,014</b>	<b>\$2,345</b>

## Step 3: Cash Flow Projections (SCF)

Projecting cash flow requires an understanding the income statement as well as the statement of cash flows – recall that the FCF used in servicing debt in the LBO model is CFO – Capex

Cash Flow Statement								
	2017A	2018A	2019A	2020P	2021P	2022P	2023P	2024P
Net Income				\$1,402	\$1,646	\$1,726	\$2,014	\$2,345
(+) Depreciation				724	866	1,018	1,181	1,356
(+) Amortization				15	15	15	15	15
(-) Increases in Net Working Capital				(415)	(349)	(375)	(403)	(434)
(+) Amortized Financing Fees & OID				187	187	187	187	187
(+) PIK Interest				146	149	152	155	159
<b>Cash Flow from Operations</b>				<b>\$2,058</b>	<b>\$2,513</b>	<b>\$2,722</b>	<b>\$3,148</b>	<b>\$3,628</b>
Capex				(1,051)	(1,130)	(1,215)	(1,306)	(1,404)
<b>Cash Flow From Investing Activities</b>				<b>(\$1,051)</b>	<b>(\$1,130)</b>	<b>(\$1,215)</b>	<b>(\$1,306)</b>	<b>(\$1,404)</b>
<b>Free Cash Flow</b>				<b>\$1,007</b>	<b>\$1,383</b>	<b>\$1,507</b>	<b>\$1,842</b>	<b>\$2,224</b>
Mandatory Amortization				(494)	(494)	(494)	(494)	(494)
Preferred Stock Cash Dividend				(144)	(151)	(159)	(167)	(175)
(Discretionary Debt Paydown) / Revolver Draw				(369)	(738)	(854)	(1,181)	(1,554)
<b>Cash Flow From Financing Activities</b>				<b>(\$1,007)</b>	<b>(\$1,383)</b>	<b>(\$1,507)</b>	<b>(\$1,842)</b>	<b>(\$2,224)</b>
Cash Beginning Balance				2,000	2,000	2,000	2,000	2,000
Change in Cash				--	--	--	--	--
<b>Cash Ending Balance</b>				<b>\$2,000</b>	<b>\$2,000</b>	<b>\$2,000</b>	<b>\$2,000</b>	<b>\$2,000</b>



# Step 4: Debt Schedule

The debt schedule is a key component of the LBO and differentiates this valuation methodology from any other that we have discussed previously – the is used alongside CF projections to determine the impacts of leverage

Debt Schedule						
	2019A	2020P	2021P	2022P	2023P	2024P
Cash Flow After Mandatory Debt Service		\$369	\$738	\$854	\$1,181	\$1,554
Beginning Cash		2,000	2,000	2,000	2,000	2,000
Minimum Cash		(2,000)	(2,000)	(2,000)	(2,000)	(2,000)
<b>Free Cash Flow Available for Optional Debt Paydown</b>		<b>\$369</b>	<b>\$738</b>	<b>\$854</b>	<b>\$1,181</b>	<b>\$1,554</b>
<b>Revolver:</b>						
Beginning Balance		--	--	--	--	--
Draw (Paydown)		--	--	--	--	--
Ending Balance	--	--	--	--	--	--
Unused Facility	\$7,500	7,500	7,500	7,500	7,500	7,500
Compliance Check		Compliant	Compliant	Compliant	Compliant	Compliant
<b>Term Loan:</b>						
Beginning Balance		24,714	23,851	22,619	21,271	19,596
Mandatory Amortization	2.0%	(494)	(494)	(494)	(494)	(494)
Optional Paydown	Yes	(369)	(738)	(854)	(1,181)	(1,554)
Ending Balance		\$24,714	\$23,851	\$22,619	\$21,271	\$19,596
<b>Subordinated Debt:</b>						
Beginning Balance		8,238	8,238	8,238	8,238	8,238
Mandatory Amortization	--	--	--	--	--	--
Optional Paydown	No	--	--	--	--	--
Ending Balance		\$8,238	\$8,238	\$8,238	\$8,238	\$8,238
<b>Mezzanine Financing:</b>						
Beginning Balance		6,865	7,011	7,160	7,312	7,467
PIK Interest		146	149	152	155	159
Ending Balance		\$6,865	\$7,011	\$7,160	\$7,312	\$7,467

## Step 4: Debt Schedule (Interest Schedule)

Alongside the debt schedule, interest expense must be modeled in as this will play a critical role in determining the cash flow available to service the debt and ultimately the PE sponsor's ability to generate shareholder value

Interest Schedule			2019A	2020P	2021P	2022P	2023P	2024P
3 Month LIBOR				2.30%	2.21%	2.24%	2.33%	2.44%
	<u>Spread /</u>	<u>Floor</u>						
	<u>Coupon</u>							
Revolver	L + 400	1.0%		--	--	--	--	--
Term Loan	L + 450	1.0%		1,651	1,558	1,479	1,396	1,289
Subordinated Debt	8.125%			669	669	669	669	669
Mezzanine Financing - Cash Interest	9.000%			624	638	651	665	679
Mezzanine Financing - PIK Interest	2.125%			146	149	152	155	159
Undrawn Revolver Commitment Fee	0.500%			38	38	38	38	38
Total Interest Expense on Debt				\$3,128	\$3,052	\$2,989	\$2,923	\$2,833
<b>Financing Fees &amp; OID:</b>	<u>Fee &amp; OID \$</u>	<u>Tenor</u>						
Revolver	75	5 yrs		15	15	15	15	15
Term Loan	494	5 yrs		99	99	99	99	99
Subordinated Debt	330	7 yrs		47	47	47	47	47
Mezzanine Financing	206	8 yrs		26	26	26	26	26
Total Financing Fees & OID Amortization				\$187	\$187	\$187	\$187	\$187
Interest Income on Cash	0.750%			15	15	15	15	15
<b>Net Interest Expense (Income)</b>				<b>\$3,300</b>	<b>\$3,223</b>	<b>\$3,161</b>	<b>\$3,095</b>	<b>\$3,005</b>
Preferred Stock Dividend - Cash	10.000%			144	151	159	167	175
Preferred Stock PIK Accrual				69	72	76	79	83

## Step 5: Returns Analysis (Determining Equity Value)

Upon exit, the sponsor will be most concerned with the equity value of the firm as this will represent the residual cash flow available to the firm's owners – this is determined by bridging from EV back to equity value

	Returns					
	2019A	2020P	2021P	2022P	2023P	2024P
EBITDA @ Exit		\$5,929	\$6,374	\$6,852	\$7,366	\$7,918
Exit Multiple		25.0x	25.0x	25.0x	25.0x	25.0x
Enterprise Value		\$148,229	\$159,346	\$171,297	\$184,144	\$197,955
(-) Debt		(39,100)	(38,017)	(36,821)	(35,301)	(33,411)
(-) Preferred Stock		(1,442)	(1,514)	(1,589)	(1,669)	(1,752)
(+) Cash		2,000	2,000	2,000	2,000	2,000
Equity Value		\$109,687	\$121,815	\$134,887	\$149,174	\$164,792

## Step 5: Returns Analysis (IRR and MOIC)

Having determined the equity value upon exit, the sponsor will then determine the IRR and the Multiple on Invested Capital to determine if the acquisition would be accretive to the fund's returns and an attractive investment

Sponsor Investment	Exit Year
Proceeds at Exit	2024
Net Cash Flow	

<b>Sponsor IRR:</b>	<b>9.7%</b>
<b>Sponsor MoM:</b>	<b>1.6x</b>

2019A	2020P	2021P	2022P	2023P	2024P
(\$94,332)	--	--	--	--	--
	--	--	--	--	149,659
(\$94,332)	--	--	--	--	\$149,659

## Step 5: Returns Analysis (IRR and MOIC)

Upon conclusion of the model, sensitivity tables are created to analyze the impacts of different financing structures and valuations in terms of IRR and MOIC

		Entry Multiple						
		15x	17x	19x	21x	23x	25x	27x
Leverage	5.00x	12.1%	11.3%	10.7%	10.3%	10.0%	9.7%	9.4%
	5.50x	12.3%	11.5%	10.9%	10.4%	10.0%	9.7%	9.5%
	6.00x	12.5%	11.6%	11.0%	10.5%	10.1%	9.8%	9.5%
	6.50x	12.6%	11.7%	11.0%	10.5%	10.1%	9.8%	9.5%
	7.00x	12.8%	11.7%	11.0%	10.5%	10.1%	9.7%	9.5%
	7.50x	12.8%	11.7%	11.0%	10.4%	10.0%	9.7%	9.4%
	8.00x	12.7%	11.6%	10.8%	10.3%	9.9%	9.6%	9.3%
	8.50x	12.7%	11.5%	10.7%	10.2%	9.7%	9.4%	9.2%