Lecture 6 – LBO & Equity Analysis

➢ A leveraged buyout (or LBO, or highly leveraged transaction (HLT) occurs when an investor, typically a financial sponsor acquires a controlling interest in a company's equity and where a significant percentage of the purchase price is financed through leverage (Debt).

➢ The Debt raised (by issuing bonds or securing a loan) is ultimately secured upon the acquisition target and also looks to the cash flows of the acquisition target to make interest and principal payments.

➢ Acquisition debt in an LBO is usually non-recourse to the financial sponsor and to the equity fund that the financial sponsor manages.

➢ The amount of debt used to finance a transaction as a percentage of the purchase price for a leverage buyout target, varies according to the financial condition and history of the acquisition target, market conditions, the willingness of lenders to extend credit. Typically the debt portion of a LBO ranges from 50%-85% of the purchase price, but in some cases debt may represent upwards of 95% of purchase price.

➢ To finance LBO's, private-equity firms usually issue some combination of syndicated loans and high yield bonds.

Graph 3.1

Typical structure of a LBO transaction

LBO History & Market Evolution

➢ The first leveraged buyout may have been the purchase of two companies: Pan-Atlantic and Waterman companies (steamship companies) in 1955 by McLean Industries.

- McLean borrowed $42 million and raised an additional $7 million through an issue of preferred stock.
- When the deal closed, $20 million of Waterman cash and assets were used to retire $20 million of the loan debt.
- The Debt raised (by issuing bonds or securing a loan) is ultimately secured upon the acquisition target and also looks to the cash flows of the acquisition target to make interest and principal payments.

➢ The use of publicly traded holding companies as investment vehicles to acquire portfolios of investments in corporate assets was a relatively new trend in the 1960s, popularized by the likes of Warren Buffett via Berkshire Hathaway and Victor Posner via DWG Corporation.

➢ The leveraged buyout boom of the 1980s was conceived by a number of corporate financiers, most notably Jerome Kohlberg, Jr. and later his protégé Henry Kravis and his cousin George Roberts – both working for Bear Stearns – to create KKR.

➤ In 1989, KKR closed in on a $31.1 billion dollar takeover of RJR Nabisco. It was, at that time and for over 17 years, the largest leverage buyout in history. The event was chronicled in the book (and later the movie), *Barbarians at the Gate: The Fall of RJR Nabisco.*

➤ Drexel Burnham Lambert was the investment bank most responsible for the boom in private equity during the 1980s due to its leadership in the issuance of high-yield debt.

➤ Mega Deals of 2005-2007: The combination of decreasing interest rates, loosening lending standards, creation of CLOs and regulatory changes for publicly traded companies (specifically the Sarbanes-Oxley Act.) would set the stage for the largest boom private equity had seen.

Leveraged Buyouts – Enhancing Equity Returns

Your Business

Income Statement	
EBIT :	$1.5 million
Interest Exp.:	$ 0 million
Pretax Income:	$1.5 million
Taxes (33%):	$0.5 million
Net Income:	$1.0 million

Balance Sheet

ASSETS:	LIABILITIES:
	$0 (No Debt)
	EQUITY:
$10 million	$10 million

ROA = 10%
ROE = 10%

The offer: $10mm (10 x Net Income) borrowed $9 million (90%) at 10%

LBO: NewCo

Income Statement	
EBIT:	$1.5 million
Interest Exp.:	$ 0.9 million
Pretax Income:	$ 0.6 million
Taxes (33%):	$ 0.2 million
Net Income:	$ 0.4 million

Balance Sheet

ASSETS:	LIABILITIES:
	$9 million
	EQUITY:
$10 million	$1 million

ROA = 10%
ROE = 40%

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Leveraged Buyouts – Enhancing Equity Returns

Your Business

Income Statement		Balance Sheet		
Income Statement		**Balance Sheet**		
EBIT :	$1.5 million	**ASSETS**:	**LIABILITIES**:	
Interest Exp.:	$ 0 million		$0 (No Debt)	ROA = 10%
Pretax Income:	$1.5 million			ROE = 10%
Taxes (33%):	$0.5 million		**EQUITY**:	
Net Income:	$1.0 million	$10 million	$10 million	

20% Premium

The offer: $12 mm (12 x Net Income) borrowed $10.8 million (90%) at 10%

LBO: NewCo

Income Statement		Balance Sheet		
EBIT:	$1.50 million	**ASSETS**:	**LIABILITIES**:	
Interest Exp.:	$1.08 million	Purchase: $10 million	$10.8 million	ROA = 10% (tang)
Pretax Income:	$ 0.42 million	Goodwill: $ 2 million		**ROE = 23%**
Taxes (33%):	$ 0.14 million		**EQUITY**:	
Net Income:	$ 0.28 million	Total: $12 million	$ 1.2 million	

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Senior Debt (Bank Loan or Leverage Loan)

➢ Ranks ahead of all other debt and equity capital in the business

➢ Bank loans are typically structured in up to three tranches: Revolver, TL A and TL B.

➢ The debt is usually secured on specific assets of the company, which means the lender can automatically acquire these assets if the company breaches its obligations under the relevant loan agreement; therefore it has the lowest cost of debt.

➢ Typical Maturity 5-7 years

➢ Senior Debt represent 45-60% of total Capital

➢ Senior Debt Multiples represent 3.0x – 4.0x of historic EBITDA

➤ Revolver and TL A (called Pro-rata facilities) are provided by traditional banks

➤ Term Loan B (called institutional facility) is provided by non-banking institutions (CLOs, Insurance Co., Funds

Pros
✓ Usually offers the lowest cost of funding
✓ Prepayable at no or little cost
✓ Deep established market in the U.S which can accommodate large transactions
✓ Private market and therefore less exposed to volatile market conditions
✓ No equity dilution

Cons
✓ Requires periodic amortization out of free cash flows, therefore this instrument may not be suitable for companies consuming cash for some years
✓ Strict maintenance covenants are tightly monitored, usually on a quarterly basis (eg total leverage, interest cover, fixed charge cover ratio, etc)
✓ Full security required in most cases

Subordinated Debt (Mezzanine)

➤ Ranks behind senior debt in order of priority on any liquidation.

➤ The terms of the subordinated debt are usually less stringent than senior debt.

➤ Repayment is usually required in one 'bullet' payment at the end of the term.

➤ Typical maturity is 8-10 years

➤ Since subordinated debt gives the lender less security than senior debt, lending costs are typically higher.

➢ An increasingly important form of subordinated debt is the high yield bond, often listed on US markets.

➢ They are fixed rate, publicly traded, long-term securities with a looser covenant package than senior debt though they are subject to stringent reporting requirements.

➢ High yield bonds are not prepayable for the first five years and after that, they are prepayable at a premium (Call premiums)

➢ SEC requires the Issuer of these bonds to be rated by two independent agencies (Moody's and S&P)

➢ Subordinated Debt represent 15-25% of total Capital

➢ Total Debt (including both the Senior and Sub debt represent 5.0x – 6.0x of historic EBITDA.

Private Equity

➢ Ranks at the bottom of the "waterfall" in order of priority on any liquidation.

➢ Equity represent 20-35% of total Capital

Estimate Debt Capacity

➢ The next step is to estimate the amount of debt that the company can take on.
➢ The financial statements should make provisions for interest and debt costs.
➢ The company can only bear debt to the extent that it has available cash flows. Note that all existing debt will need to be refinanced. When modelling (Equity or Debt investors) the financing assumptions used are according to market conditions, industry characteristic and company specific issues. Set out below are some parameters that will influence financing considerations for the model:

- Minimum interest cover (times)
- Total debt/EBITDA (times)

- Senior debt repayment (in years)
- Mezzanine debt repayment (in years)
- Senior debt interest rate
- Subordinated interest rate
- Mezzanine finance exit IRR

Capital Markets: Types of Financing

Example:

XYZ Company trades at NYSE at $15 with 20 million shares and has $300 million of Debt, $100 of Cash and $100 mm of EBITDA, so

Trading Enterprise Value (EV) = (Equity at $15 x 40 million shares) + $300 mm Debt – $ 100 mm Cash = $800 mm

or 8.0x EBITDA trading multiple (EV / EBITDA)

The PE firm are in the process of tendering for all the shares of XYZ. To ensure a success of acquiring all the shares, they thinking of offering 33% premium to the existing trading level stock, or tendering for the stock at $20 per share putting he EV at $1 billion - ($20 x 40 mm shares) + $300 mm Debt - $100mm Cash = $1 billion

Transaction Sources & Uses

Sources	Capacity	Amount	% Cap		Uses	
Senior Debt	4.0x	$ 400.00	40.0%		Purchase of Stock	800.0
Subordinated Debt	6.0x	$ 200.00	20.0%		Refinance of Debt	300.0
Equity		$ 400.00	40.0%		Cash	(100.0)
Total Sources	10.0x	1,000.0	100.0%		Total Uses	1,000.0

> The PE firm will need to run their own LBO Analysis to see if $1 billion acquisition makes sense given the Debt Capacity and improvement of EBITDA in the next 3-5 years.

EBITDA   **$ 100.00 mm**

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Senior Debt / Loan Pricing

Other Terminology to the Credit Agreement

- ➤ LIBOR Floor
- ➤ Original Issuer Discount (OID)
- ➤ Margin Spread

A typical calculation of Loan Yields in the secondary market for loans:

LIBOR or LIBOR Floor + Margin Spread + (100-OID)/4* years = Loan Yield

*market convention is to use 4 years as it represents the average life
Example:
LIBOR Floor = 1.00%
Margin Spread = 400 basis points (or 4.00%)
OID = 98

Then the Loan Yield is calculated to:
1.0% + 4.0% + [(100 − 98)/100]/4 = 5.0% + (2.0% / 4) = 5.0% + 0.5% = 5.5% Yield

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High Yield Bond Pricing

Concepts:

- ➤ Face Value / Par Value ($1,000)
  - ➤ Market Value quoted as a % of Face Value (priced at 98 or 98% of $1,000)
- ➤ Coupon Payments / Coupon (Interest Rate)
  - ➤ Semi Annual Payments (interest payments)
  - ➤ Callable / Non-Callable Bonds
  - ➤ YTM, YTC, YTW

Yield to Maturity Vs Yield to Call

BV=	1,000.00	100 Face Value
MV=	850.00	85 Price
Coupon=	8%	
n=	10 years	

Year	Call Price	YTC/YTM	0	1	2	3	4	5	6	7	8	9	10
Year 1 =	105	32.9%	(850.00)	1,130.00									
Year 2 =	104	19.6%	(850.00)	80.00	1,120.00								
Year 3 =	103	15.5%	(850.00)	80.00	80.00	1,110.00							
Year 4 =	102	13.5%	(850.00)	80.00	80.00	80.00	1,100.00						
Year 5 =	101	12.4%	(850.00)	80.00	80.00	80.00	80.00	1,090.00					
Year 6-10 =	100	10.5%	(850.00)	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	1,080.00

Other Bond Concepts:

- ➤ Duration & Convexity
  - ➤ Convertible Bonds
  - ➤

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SEE UPDATED SPREADSHEET ON LINE

Equity IRR Analysis

Starwood Hotel & Resort ('HOT')
Public to Private LBO Equity Analysis using CAPM

TRANSACTION SOURCES & USES

Sources:	Debt Capacity (EBITDA x)	Amount ($ 000's)	% Capital	Expected Return	Expected Return (After Tax)	WACC (After Tax)	EBITDA Multiple
Bank Loan	3.5x	4,032,000	26.9%	4.896%	3.134%	0.84%	3.9x
Mezzanine Note		2,880,000	19.2%	7.000%	4.480%	0.86%	2.8x
Total Debt	6.0x	6,912,000	46.2%			1.71%	6.7x
Equity	7.0x	8,064,000	53.8%	17.78%	17.78%	9.57%	7.8x
Total Sources	13.0x	14,976,000	100.0%			11.28%	14.5x

Uses:	Current Stock Price	Stock Price Bid	1st Year's EBITDA Multiple	Amount ($ 000's)	% of Total Uses	Shares Outstanding (mm)	
Sock Purchase	$ 53.10	$ 57.30		11,326,000	73.4%	197.65	WACD = 3.695%
Refinance Debt				3,650,000	23.7%		
Enteprise Value			13.0x	14,976,000	97.1%		
Transaction Fees & Expenses	Premium= 7.9%		3.0%	449,280	2.9%		Tax Rate= 36.0%
Total Uses				15,425,280	100.0%		

COST OF DEBT AND EQUITY CALCULATIONS

COST OF BANK DEBT CALCULATION (Floaring Rate)			Equity Risk Premiums (1926-2006) (CAPM Model)		
3M-LIBOR Assumptions	**Loan Spread**	**Initial All -In**	**Decile**	**Mkt Cap $MM**	**Risk Prem.**
0.30%	3.50%	3.80%	1	524,351	7.03%
			2	10,344	8.05%
COST OF MEZZANINE NOTE CALCULATION			3	4,144	8.47%
7.00%			4	2,177	8.75%
COST OF EQUITY CALCULATION $E(re) = rf + \beta \cdot Pe + e$			5	1,328	9.03%
6-year Treasury Note [rf]	1.20%		6	840	9.18%
Beta for Publicly Traded Hotel [β]	1.500x		7	538	9.58%
Equity Premium [Pe]	11.05%		8	333	9.91%
Firm Specific Risk Premium [e]	0.0%		9	193	10.43%
Cost of Equity	**17.78%**		**10**	**85**	**11.05%**

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Equity IRR Analysis

DEBT ASSUMPTIONS & RETURN ANALYSIS								
Bank Loan Information	Debt IRR	Terms	2012	2013	2014	2015	2016	2017
Amount Outstanding (End of Year)		4,032,000	4,032,000	3,830,400	3,427,200	2,822,400	2,016,000	1,209,600
Schedule Principal Payments		7 years	-	201,600	403,200	604,800	806,400	806,400
Interest Payment (Calc based on last Year's Outs)		4.90%	153,216	173,376	183,859	198,778	163,699	116,928
Total Financing Payment	4.896%	(4,032,000)	153,216	374,976	587,059	803,578	970,099	923,328
Interest Rate			3.80%	4.30%	4.80%	5.80%	5.80%	5.80%
LIBOR RATE	0.30%		0.30%	0.80%	1.30%	2.30%	2.30%	2.30%
LIBOR Rate Increase Assumptions			0.00%	0.50%	0.50%	1.00%	0.00%	0.00%
Corporate Bond Information								
Amount Outstanding		2,880,000	2,880,000	2,880,000	2,880,000	2,880,000	2,880,000	2,880,000
Schedule Principal Payments		10 Years	-	-	-	-	-	-
Interest Payment (Calc based on last Year's Outs)		7.00%	201,600	201,600	201,600	201,600	201,600	201,600
Total Financing Payment	7.000%	(2,880,000)	201,600	201,600	201,600	201,600	201,600	201,600
Total Financing			354,816	576,576	788,659	1,005,178	1,171,699	1,124,928
Total Debt Outstanding			6,912,000	6,710,400	6,307,200	5,702,400	4,896,000	4,089,600

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Equity IRR Analysis

CASH FLOW & EQUITY RETURN ANALYSIS								
Company Projections	Operating Assump.	Entry Year 2011	Year 1 2012	Year 2 2013	Year 3 2014	Year 4 2015	Year 5 2016	Exit Year 2017
Revenues	7.00%	5,624,000	6,017,680	6,438,918	6,889,642	7,371,917	7,887,951	8,440,107
Cost of Revenues (Incl. Depreciation)	35.0%	(1,970,000)	(2,107,900)	(2,255,453)	(2,413,335)	(2,582,268)	(2,763,027)	(2,956,439)
Operating Costs	47.8%	(2,691,000)	(2,879,370)	(3,080,926)	(3,296,591)	(3,527,352)	(3,774,267)	(4,038,465)
EBIT	17.1%	963,000	1,030,410	1,102,539	1,179,716	1,262,297	1,350,657	1,445,203
Less Amortization of Fees	7		(64,183)	(64,183)	(64,183)	(64,183)	(64,183)	(64,183)
EBIT			966,227	1,038,356	1,115,534	1,198,114	1,286,474	1,381,020
Less Interest (Unlevered for DCF Analysis)			(354,816)	(374,976)	(385,459)	(400,378)	(365,299)	(318,528)
EBT			611,411	1,413,332	1,500,993	1,598,491	1,651,774	1,699,548
Less Taxes (adj out Interest Exp)	36.0%		(220,108)	(508,799)	(540,357)	(575,457)	(594,639)	(611,837)
Plus Interest			354,816	374,976	385,459	400,378	365,299	318,528
Plus Depreciation	3.4%	189,000	202,230	216,386	231,533	247,740	265,082	283,638
Plus Amortization			64,183	64,183	64,183	64,183	64,183	64,183
Less Working Capital	0.00%		-	-	-	-	-	-
Less Capex	6.85%	(385,000)	(411,950)	(440,787)	(471,642)	(504,656)	(539,982)	(577,781)
Cash Flow Before Financing (CFBF)			600,582	1,119,291	1,170,169	1,230,679	1,211,717	1,176,279
Less Financing (P + I)			(354,816)	(576,576)	(788,659)	(1,005,178)	(1,171,699)	(1,124,928)
Equity Cash Flows			245,766	542,715	381,510	225,501	40,018	51,351
EBITDA		1,152,000	1,232,640	1,318,925	1,411,250	1,510,037	1,615,740	1,728,841
Terminal Value								
EBITDA Multiple Method (initial purchase multiple)	Growth	13.0x						22,474,938
Perpetuity Method (using WACC + growth)	3.50%	11.28%						14,410,675
Average Terminal Value								18,442,806
Debt Outstanding								4,089,600
Equity Value (TV - Debt)								14,353,206
Equity Cash Flows		(8,064,000)	245,766	542,715	381,510	225,501	40,018	14,404,557
			x	x	x	x	x	x
$ 1 PV Table (Expected Equity Rate)	17.78%		0.8490766	0.7209311	0.6121258	0.5197417	0.4413005	0.3746980
PV Table (Expected Equity Rate)		6,365,686	208,674	391,260	233,532	117,202	17,660	5,397,358
Initial Investment		(8,064,000)						
NPV=		(1,698,314)						
IRR=		12.8%						

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