

CHAPTER 18

Lease Financing and Business Valuation

- **Lease financing**
 - **Leasing basics**
 - **Analysis by the lessee**
 - **Motivations for leasing**
- **Business valuation**
 - **Business valuation basics**
 - **DCF valuation**
 - **Market multiple valuation**

Lease Fundamentals

- **Leasing is a widely used type of financing among healthcare providers, especially for medical equipment.**
- **There are two parties to lease transactions:**
 - **The **lessee**, who uses the asset and makes the lease (rental) payments**
 - **The **lessor**, who owns the asset and receives the rental payments**

Primary Lease Types

■ Operating leases

- Short term
- Normally cancelable
- Maintenance usually included

■ Financial leases

- Long term
- Normally noncancelable
- Maintenance usually not included
- *Sale and leaseback* is a special type of financial lease

■ Combination leases

Tax Effects (For-Profit Businesses)

- Leases are classified by the *IRS* as either **guideline** or **nonguideline**.
- For a *guideline lease*, the entire lease payment is tax deductible to the lessee.
- For a *nonguideline lease*, only the imputed interest payment is deductible.
- ? Why should the IRS be concerned about lease provisions?

Tax Effects (Not-for-Profit Businesses)

- Standard leases allow lessors to benefit from depreciation tax deductibility. This benefit then can be shared with the NFP lessee, who would not otherwise benefit from depreciation.
- A **tax-exempt lease** is a type of lease in which the implied interest payment is *nontaxable* to the lessor.
 - The rationale is that interest payments received by lenders to NFP businesses are nontaxable.
 - Lessors can set lower lease payments and still earn their target (after-tax) return.

Income Statement Sheet Effects

- For *financial accounting purposes*, leases are classified as either **capital** or **operating**.
- Balance sheet
 - *Capital leases* must be shown directly on the lessee's balance sheet.
 - *Operating leases*, sometimes referred to as *off-balance sheet financing*, must be disclosed in the footnotes.
- Income statement. In both cases, lease (rental) payments are reported on the income statement as an expense.
- ? Why are these rules in place?

Leasing and Capital Structure

- Leasing is a substitute for *debt financing*.
 - It obligates the lessee to fixed payments.
 - Lessors have rights similar to lenders.
- As such, leasing uses up a business's *debt capacity*.
- ? Assume a business has a *50/50* target capital structure. Half of its assets are leased. How should the remaining assets be financed?

Lease Analysis

- Lease analysis is performed by both the lessee and lessor.
 - The lessee must determine whether to lease or buy the asset (a *financing decision*).
 - The lessor must determine whether or not to “write” the lease (an *investment decision*).
- We will focus on the lessee.
 - Dollar cost analysis
 - Percentage cost analysis

Lease Analysis Example

- Assume that Metro Healthcare (a for-profit business) plans to acquire new diagnostic equipment having a four-year useful life.
- If the equipment is leased:
 - Metro can obtain a four-year lease that includes maintenance.
 - The lease meets IRS guidelines.
 - The rental payment would be **\$280,000** at the *beginning* of each year.

Lease Analysis Example (Cont.)

- If the equipment is purchased:
 - Equipment cost = **\$1,000,000**.
 - Bank loan rate = **10%**.
 - A four-year maintenance contract would cost **\$20,000** at the *beginning* of each year.
 - **Residual value** (at $t = 4$) = **\$100,000**.
- Other information:
 - Marginal tax rate = **40%**.
 - Equipment has a **three-year** MACRS life

Dollar Cost Analysis (After-Tax Cost of Owning) (000s)

	0	1	2	3	4
Price (\$1,000)					
Dep shld*		\$132	\$180	\$60	\$ 28
Maint	(20)	(20)	(20)	(20)	
Tax sav	8	8	8	8	
RV					100
RV tax					(40)
NCF	(\$1,012)	\$120	\$168	\$48	\$ 88

*Depreciation shield = Annual depreciation expense x Tax rate.

Dollar Cost Analysis (Cont.)

- Leasing is similar to debt financing.
 - The cash flows have *relatively* low risk; most are fixed by contract.
 - Therefore, Metro's **10** percent cost of debt is the appropriate discount rate.
- However, the tax shield of interest payments must be recognized, so
$$10\% \times (1 - T) = 10\% \times (1 - 0.40) = 6.0\%.$$
- PV cost of owning @ 6% = **-\$639,267.**

Dollar Cost Analysis (Cont.) (After-Tax Cost of Leasing) (000s)

	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Lease pmt	(\$280)	(\$280)	(\$280)	(\$280)	
Tax savings	112	112	112	112	
NCF	(\$168)	(\$168)	(\$168)	(\$168)	

PV cost of leasing @ 6% = -\$617,066.

Dollar Cost Analysis (Net Advantage to Leasing [NAL])

$$\begin{aligned} \blacksquare \text{NAL} &= \text{PV leasing} - \text{PV owning} \\ &= - \$617,066 - (-\$639,267) \\ &= \mathbf{\$22,201.} \end{aligned}$$

? Should Metro lease or buy the diagnostic equipment? Why?

Residual Value (RV) Risk

- The discount rate applied to the *residual value cash flows* could be increased to account for the higher relative risk.
 - All other cash flows should be discounted at the original **6** percent rate.
 - If we use a **10** percent discount rate on the RV flows, the NAL increases from **\$22,201** to **\$28,751**.
- ? Does this make sense?

Percentage Cost Analysis (000s)

Combine the CFs on a single time line:

	0	1	2	3	4
Lease CF	(\$ 168)	(\$168)	(\$168)	(\$168)	
- Own CF	(1,012)	120	168	48	88
NCF	\$ 844	(\$288)	(\$336)	(\$216)	(\$88)

NAL @ 6% = \$22,201.

IRR = After-tax lease cost = 4.6%.

Per Procedure Leases

- In a **per procedure** lease, some *operating risk* is passed from the lessee to the lessor.
- However, the greater the amount of risk that is transferred to the lessor, the higher the lease payment and hence the *expected cost* of the lease.
- ? Might such leases still be a “good deal” for the lessee? Why?

Lease Analysis by the Lessor

- To the lessor, **writing** the lease is an investment.
- Therefore, the lessor must compare the return on the lease investment with the return available on alternative investments of similar risk.
- The numerical analysis is handled like any other investment.

Motivations For Leasing

- Leasing is a ***zero sum game***. If all inputs are identical to the lessee and lessor, neither can “win.”
- Thus, leasing is driven by asymmetries.
 - Tax differentials, including the AMT
 - Ability to bear risk
 - Residual value risk
 - Utilization risk (per procedure leases)
 - Project life risk
 - Maintenance services
 - Information costs
 - Bankruptcy costs

Questionable Motivations

- **Leasing preserves the liquidity of the business.**
- **Leasing is “off balance sheet” financing, and hence it preserves the debt capacity of the business.**

Business Valuation Basics

- Entire businesses are valued for a variety of reasons.
 - Possible acquisition
 - Buyout of one partner by another
 - Estate tax purposes
- In general, the *equity stake* in the business is the relevant value.

Business Valuation Basics (Cont.)

- **The economic value of any business stems from its ability to generate future **cash flows**.**
- **There are several techniques used to estimate a business's value. The two most common are:**
 - **Discounted cash flow (DCF) analysis**, which uses expected future cash flows as the basis.
 - **Market multiple analysis**, which uses a value proxy such as revenues as the basis.

Business Valuation Illustration

- Consider the following data for West-side Clinic, a for-profit group practice.
- Cost of equity = 14%.
- **Gross** asset investment requirements:
 - Year 1 = \$0.7 million.
 - Year 2 = \$0.8 million.
 - Year 3 = \$0.9 million.
 - Year 4 = \$1.0 million.

Business Valuation Illustration (Cont.)

- **Selected clinical data:**
 - **Number of physicians = 15.**
 - **Annual number of visits = 100,000.**
- **Forecasted long-term growth rate = 4%.**
- **The clinic's forecasted income statements for Years 1–4 are shown on the next slide.**

Forecasted Income Statements (in millions)

	1	2	3	4
Net revenues	\$11.5	\$12.5	\$13.7	\$15.0
Operating expenses	10.0	10.5	11.0	11.6
Depreciation	<u>0.5</u>	<u>0.5</u>	<u>0.6</u>	<u>0.6</u>
EBIT	\$ 1.0	\$ 1.5	\$ 2.1	\$ 2.8
Interest expense	<u>0.4</u>	<u>0.4</u>	<u>0.5</u>	<u>0.5</u>
EBT	\$ 0.6	\$ 1.1	\$ 1.6	\$ 2.3
Taxes (30%)	<u>0.2</u>	<u>0.3</u>	<u>0.5</u>	<u>0.7</u>
Net income	<u><u>\$ 0.4</u></u>	<u><u>\$ 0.8</u></u>	<u><u>\$ 1.1</u></u>	<u><u>\$ 1.6</u></u>

Discounted Cash Flow Methods

- Discounted cash flow (DCF) methods use projected *cash flows* as the basis of economic value.
- There are several alternative formats that can be used.
 - The **free cash flow to equityholders method** is the most commonly used, because it focuses on the value of a business's equity.
 - The term "*free*" means cash flows available to investors net of those *required for reinvestment in the business*.

Free Equity Cash Flow Method

- Free equity cash flow (FECF) is defined as **net income** *plus* **depreciation** *less* the **equity component** of reinvested cash flows.
- FECFs have the riskiness associated with equity investments and hence must be discounted by a **cost of equity** (as opposed to a corporate cost of capital).
- As always, the proper discount rate must reflect the riskiness of the flows being discounted.

Forecasted FECFs (in millions)

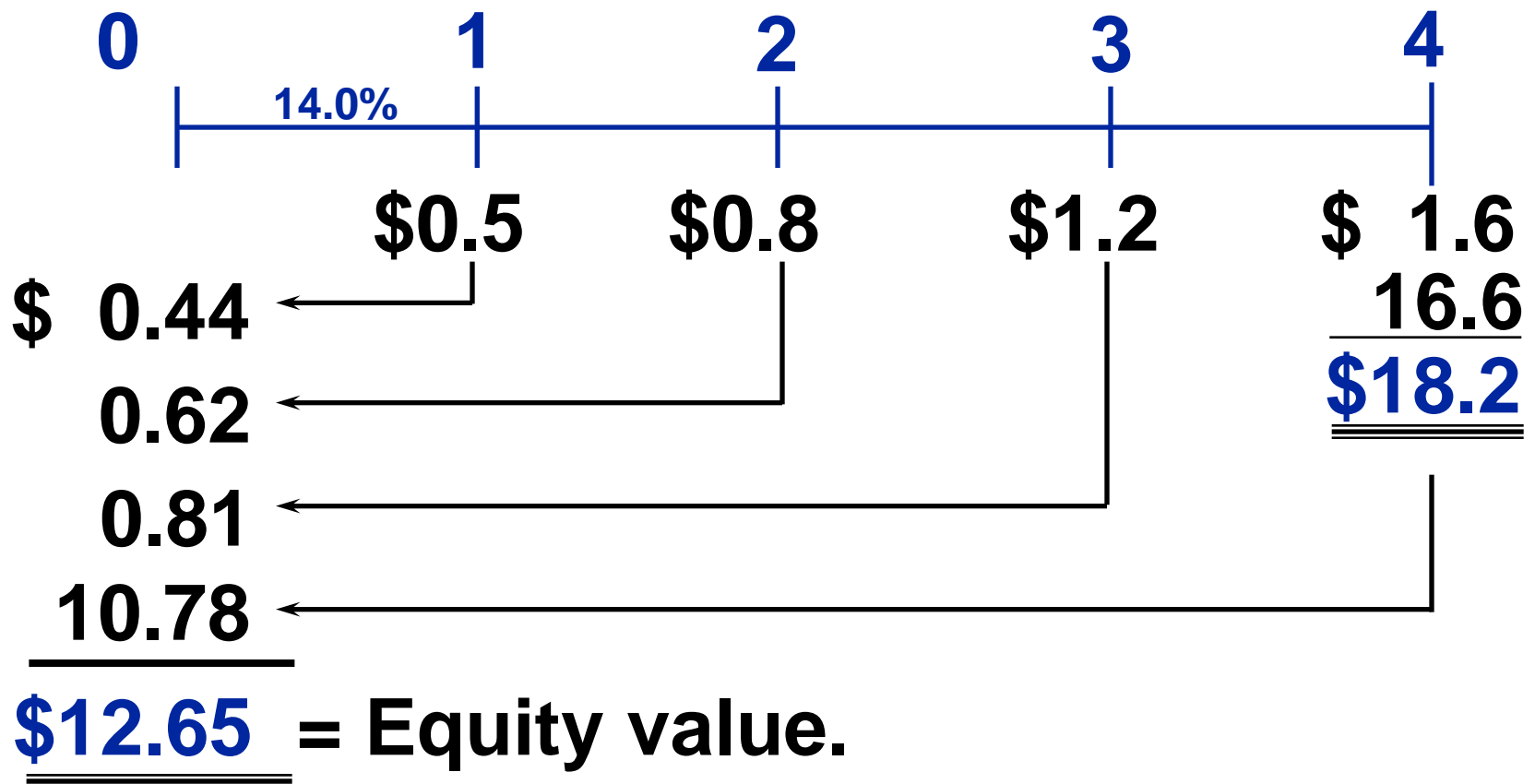
	1	2	3	4
Net income	\$ 0.4	\$ 0.8	\$ 1.1	\$ 1.6
Plus: Depreciation	0.5	0.5	0.6	0.6
Less: Asset reinvestment	<u>0.4</u>	<u>0.5</u>	<u>0.5</u>	<u>0.6</u>
Free equity cash flow	<u><u>\$ 0.5</u></u>	<u><u>\$ 0.8</u></u>	<u><u>\$ 1.2</u></u>	<u><u>\$ 1.6</u></u>

Note: Rounding differences occur here. Also, Equity asset reinvestment = Gross reinvestment x 0.6.

Finding the Terminal Value (TV)

- Because the cash flows are forecasted for only four years, it is necessary to estimate a **terminal value (TV)**.
- The *constant growth model* can be used:
$$\text{TV} = \text{Next E(CF)} / (\text{Discount rate} - \text{Growth rate}).$$
$$\text{TV}_5 = \text{FECF}_4 / (\text{Cost of equity} - \text{Growth rate})$$
$$= (\$1.6 \times 1.04) / (0.14 - 0.04)$$
$$= \$1.66 / 0.10 = \mathbf{\$16.6 \text{ million}}.$$

Consolidated CFs and Valuation



Cost of Equity Rates

- The cost of equity as measured by the CAPM is based on the riskiness of the stock of *large companies* held in *well-diversified portfolios*.
- Business valuation analyses often involve very small companies.
 - Small companies are riskier than large companies.
 - Equity positions lack liquidity.

Cost of Equity Rates (Cont.)

- **Most analysts use the following model to estimate the cost of equity for small companies.**
 - **Use the CAPM (or similar model) to set the base rate.**
 - **Add a **size premium** (often about 4 percentage points).**
 - **Add a **liquidity premium** (often about 2 percentage points).**
 - **Add an additional premium if necessary to account for risk unique to the business (i.e., technology risk).**

Alternative DCF Method

- An alternative DCF method focuses on *free operating cash flows*.
 - The cash flows are calculated as **net operating profit after taxes (NOPAT) = EBIT x (1 - T) plus depreciation less** the required **gross investment** in the business.
 - Interest expense is *not* deducted in this method.
 - The resulting cash flows are operating flows, and hence the appropriate discount rate is a *corporate cost of capital*.
 - The end result is the value of the *entire business*. The market value of debt is then subtracted to obtain the equity value of the business.

Market Multiple Method

- **Market multiple methods** use a *proxy* for value, such as revenues. The value of the proxy is then multiplied by a *market multiple value* derived from data at other businesses.
- To illustrate, assume that two market multiples are available for medical group practices:
 - Equity value to revenues = 1.3.
 - Equity value to EBITDA = 8.0.

Market Multiple Method (Cont.)

- Westside's revenues for Year 1 are projected to be **\$11,500,000**.
- Therefore, the equity value of the clinic is estimated to be 1.3 x **\$11,500,000 = \$15.0 million**.

Market Multiple Method (Cont.)

- Westside's **EBITDA** (earnings before interest, taxes, depreciation, and amortization) for Year 1 is projected to be $\text{EBIT} + \text{Depreciation} = \$1,000,000 + \$500,000 = \$1,500,000$.
- Therefore, the equity value of the clinic is estimated to be $8 \times \$1,500,000 = \12.0 million.

Comparing the Methods

- Our estimates fall in the range of **\$12–\$15** million, but results can be *very* inconsistent.
- Both methods have significant implementation problems.
 - Confidence in DCF cash flow forecasts and discount rate often is *low*.
 - Validity of market multiple method depends on:
 - *Comparability* of firms in sample
 - *Validity* of proxy value
- **Judgment** is key to the final valuation.

Cash Flow Estimation for Acquisitions

When businesses are being valued for *acquisition purposes*, the process is exceptionally difficult.

- Management changes and synergies likely will impact cash flows.
- Tax rates often change.
- Portfolio effects may reduce risk, which affects the discount rate.
- Synergies may affect cash flows at the acquiring business.

If the valuation were for acquisition purposes, would all suitors obtain the same value for Westside Clinic?

- **No. The cash flow estimates would be different due to differences in raw estimates, tax rates, and synergies.**
- **Furthermore, different risk estimates would result in different discount rates.**
- ? **In theory, what acquirer should win a bidding war.**

Valuation Caution

- Note that the equity values typically given by the DCF and market multiple methods estimate the **operating value** of the business.
- If the business has additional value, such as a large investment in short-term securities or ownership interest in another company, the value of these nonoperating assets must be added to the initial valuation.

Conclusion

- This concludes our discussion of *Chapter 18* (Lease Financing and Business Valuation).
- Although not all concepts were discussed in class, you are responsible for all of the material in the text.
- ? Do you have any questions?