

## **Instructor Resources Sample**

This is a sample of the instructor materials for *Gapenski's Understanding Healthcare Financial Management*, eighth edition, by George H. Pink and Paula H. Song.

The complete instructor materials include the following:

- PowerPoint slides for each chapter
- End-of-chapter problem solutions
- Minicase solutions
- In-class problem solutions
- Test bank

This sample includes the PowerPoint slides and problem and minicase solutions for chapter 1, "Introduction to Healthcare Financial Management."


If you adopt this text, you will be given access to the complete materials. To obtain access, e-mail your request to [hapbooks@ache.org](mailto:hapbooks@ache.org) and include the following information in your message:

- Book title
- Your name and institution name
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- The use of the text (primary, supplemental, or recommended reading)
- A contact name and phone number/e-mail address we can use to verify your employment as an instructor

You will receive an e-mail containing access information after we have verified your instructor status. Thank you for your interest in this text and the accompanying instructor resources.

## **Digital and Alternative Formats**

Individual chapters of this book are available for instructors to create customized textbooks or course packs at [XanEdu/AcademicPub](http://XanEdu/AcademicPub). For more information about pricing and availability, please visit one of these preferred partners or contact Health Administration Press at [hapbooks@ache.org](mailto:hapbooks@ache.org).



# **CHAPTER 1**

## **Introduction to Healthcare Financial Management**

Chapter 1 focuses on the institutional setting for the delivery of healthcare services. It is important to understand the framework under which health services are delivered, because this framework has a profound influence on the practice of finance.

# Introduction

- Financial management provides the theory, concepts, and tools necessary to help managers make *better financial decisions*.
- Health services industry is truly *unique*:
  - Not-for-profit organizations
  - Third-party payer system
  - Extent of governmental involvement



# Goal of the Course

The primary goal of the course is to *enable* you to:

- Judge the validity of financial analyses performed by others.
- Incorporate sound financial management theory and principles in your own managerial and personal decision making.



# The Role of Finance

The primary role of finance is to plan for, acquire, and utilize resources to maximize the *efficiency* and *value* of the organization.



# Finance Activities

- Evaluation and planning
- Long-term investment decisions
- Financing decisions
- Working capital management
- Contract management
- Financial risk management

Does the importance of the finance role and activities change over time?



# Organizational Goals

- In *proprietorships* and *partnerships*, owners and managers are the same individuals and hence have the same goals.
- The primary goal of *investor-owned corporations* is **shareholder wealth (stock price) maximization**.
- The primary goal of *not-for-profit corporations* is generally given by a **mission statement**, often in terms of service to the community.





# Agency Relationships

- An agency relationship exists whenever a principal hires an agent to act on his or her behalf.
- Within investor-owned corporations, agency relationships exist between:
  - Shareholders and managers
  - Shareholders and creditors

Are there any agency relationships in not-for-profit corporations?





# The Agency Problem

- Managers are naturally inclined to act in their own best interests; hence, an agency problem arises.
- The following factors tend to lessen the problem in for-profit corporations:
  - Managerial incentives
  - The threat of firing
  - The threat of takeover



# Organizational Stakeholders

- All businesses, whether investor owned or not for profit, have stakeholders.
  - Stakeholders are parties that have an interest (usually financial) in the business.
  - Not-for-profit managers must satisfy all stakeholders.
  - For-profit managers are primarily concerned with satisfying stockholders.

Who are some stakeholders of not-for-profit hospitals?



# FP Versus NFP Financial Goals

- The primary financial goal of *investor-owned corporations* stems from their organizational goal: shareholder wealth (stock price) maximization.
- The primary financial goal of *not-for-profit corporations* is to ensure the financial viability of the organization.

Does the difference in financial goals lead to appreciably different behavior?

# Tax Laws

- Some understanding of tax laws is necessary because taxes influence:
  - Financing decisions
  - The operating cash flows available to an investor-owned business
  - The ability to raise contribution capital
- There are several types of taxes:
  - Federal versus state versus local
  - Personal versus corporate
  - Ordinary income versus capital gains

# Personal Taxes on Ordinary Income

*Individuals* pay federal and often state taxes on salaries, interest and dividends earned, and other income at rates that can approach 50 percent.

- *Interest* on nonfederal government bonds (called municipals or “munis”), including bonds issued by NFP providers, is not taxable.
- *Dividends* may be taxed at a lower rate (generally 15 percent) than ordinary income. Check current tax laws.

# Taxable Versus Muni Bonds

Jane Green has a combined federal and state tax rate of 20 percent, and Joe Brown has a combined rate of 40 percent. Each is considering buying a \$1,000 bond:

FP Healthcare offers a 10 percent interest rate on its taxable bonds.

NFP Healthcare issues similar-risk municipal bonds with a 7 percent interest rate.

Which bond should each person buy?



# Taxable Versus Muni Bonds

After-tax return on a bond:  $AT = BT \times (1 - T)$

		FP	NFP
		Healthcare	Healthcare
<b>Jane</b>	<b>Before-tax yield</b>	<b>10%</b>	<b>7%</b>
	<b>Tax</b>	<b><u>2%</u></b>	<b><u>0%</u></b>
	<b>After-tax yield</b>	<b>8%</b>	<b>7%</b>
<b>Joe</b>	<b>Before-tax yield</b>	<b>10%</b>	<b>7%</b>
	<b>Tax</b>	<b><u>4%</u></b>	<b><u>0%</u></b>
	<b>After-tax yield</b>	<b>6%</b>	<b>7%</b>

Personal tax rates influence the types of bonds bought by individual investors.





# Self-Check

The exemption of municipal bonds from federal taxes allows not-for-profit healthcare providers to borrow at lower interest rates than otherwise would be possible.

- True
- False



# Personal Taxes on Capital Gains

Capital assets are stocks, bonds, real estate, plant, and equipment.

- If a capital asset is sold for more than its purchase price, then that is a *capital gain*; if the asset is sold for less than the purchase price, a *capital loss* occurs.
- Short-term capital gains are taxed at ordinary income rates, while long-term capital gains are taxed at lower rates (generally 20 percent).

# Corporate Taxes

- *Investor-owned corporations* pay federal tax on corporate income at a rate of 21 percent and state tax at rates up to 12 percent.
- *Not-for-profit corporations*, for the most part, are not subject to taxation.
- *Not-for-profit corporations* have two additional tax benefits:
  - Can issue tax-exempt (municipal) bonds.
  - Can receive tax-exempt contributions.



# Unrelated Business Income

- Unrelated business income (UBI) occurs when a *tax-exempt organization* has income from a business that is:
  - Not related to its charitable purpose
  - Carried on in a for-profit manner
- UBI generally is taxed the same as a for-profit business.
- Some exceptions, such as businesses run by volunteers and sales to employees, apply.



# Interest and Dividend Income Received by an Investor-Owned Corporation

- Interest is taxed as ordinary income.
- 70 percent of dividends is excluded.
- To illustrate, assume a FP corporation has \$100,000 of taxable income from operations, \$5,000 of interest income, \$10,000 of dividend income, and has a combined federal and state tax rate of 30 percent.

Operating income	\$100,000
Interest income	5,000
Taxable dividend income	<u>3,000*</u>
Taxable income	<u><u>\$108,000</u></u>

$$\begin{aligned} \text{Federal tax} &= \$108,000 (0.30) \\ &= \$32,400 \end{aligned}$$

$$\begin{aligned} * \text{Dividends} - \text{Exclusion} \\ = \$10,000 - 0.7(\$10,000) = \$3,000 \end{aligned}$$





# Interest and Dividend Income Received by a Not-for-Profit Corporation

- Like ordinary business income, interest and dividend income typically is not taxed.
- However, NFPs *cannot* issue tax-exempt bonds for the sole purpose of investing the proceeds in securities.

Why might NFPs be inclined to do so?



# Interest and Dividend Income Paid by an Investor-Owned Corporation

- Interest paid to debtholders is tax deductible, so \$1 of pretax earnings is required to pay *each dollar of interest expense*.
- Dividends paid to stockholders are not tax deductible, so  $[\$1 / (1 - T)]$  of pretax earnings is required to pay *each dollar of dividends*.



# Self-Check

The US tax system favors equity over debt financing.

- True
- False

# Depreciation – FP Corporation

	Hosp A	Hosp B
Revenue	\$1,000	\$1,000
Costs	700	700
Depreciation	100	200
Taxable income	\$ 200	\$ 100
Taxes at 30%	60	30
After-tax income	\$ 140	\$ 70
Add depreciation	100	200
Net cash flow	\$ 240	\$ 270

Why are the net cash flows different?

# Depreciation – NFP Corporation


	Hosp A	Hosp B
Revenue	\$1,000	\$1,000
Costs	700	700
Depreciation	100	200
Taxable income	\$ 200	\$ 100
Taxes at 30%	0	0
After-tax income	\$ 200	\$ 100
Add depreciation	100	200
Net cash flow	\$ 300	\$ 300

Why are the net cash flows the same?

# Book Depreciation


- Depreciation calculated for *book (financial reporting) purposes* is different from depreciation calculated for tax purposes.
- For book purposes, the straight-line method generally is used:

$$\text{Depreciation expense} = \frac{\text{Capitalized cost} - \text{Salvage value}}{\text{Useful life}}$$



**Northside's X-ray machine has a price of \$100,000, costs \$10,000 to deliver and install, and is estimated to be worth \$5,000 at the end of its ten-year useful life.**

What is the book depreciation expense?


$$\begin{aligned}\text{Depreciation} &= \frac{\$100,000 + \$10,000 - \$5,000}{10 \text{ years}} \\ &= \$10,500 \text{ per year.}\end{aligned}$$

Thus, Northside's income statement would include an annual charge of \$10,500 for wear and tear of the machine over its ten-year useful life.




# Tax Depreciation

- The Modified Accelerated Cost Recovery System (MACRS) is used for *tax purposes*.
- It has two alternative calculation methods:
  - Standard (accelerated) method, which is typically used, because it maximizes the value of depreciation
  - Alternative straight-line method

# MACRS Components

- Depreciable basis. The total amount to be depreciated. (Note that salvage value is not considered.)
- Recovery period (class life). The number of years over which the asset is depreciated.
- Recovery allowances. The percentage of the depreciable basis that is depreciated in each year.



**Northside's X-ray machine has a price of \$100,000, costs \$10,000 to deliver and install, and falls into the MACRS five-year class.**

What is the annual tax depreciation expense for years 1-6?  
(Note: The machine is depreciated over six years because MACRS uses a half-year convention.)

<b>Year</b>	<b>Basis</b>	<b>Allowance</b>	<b>Depreciation</b>	<b>Book Value</b>
<b>1</b>	<b>\$110,000</b>	<b>20%</b>	<b>\$ 22,000</b>	<b>\$88,000</b>
<b>2</b>	<b>110,000</b>	<b>32%</b>	<b>35,200</b>	<b>52,800</b>
<b>3</b>	<b>110,000</b>	<b>19%</b>	<b>20,900</b>	<b>31,900</b>
<b>4</b>	<b>110,000</b>	<b>12%</b>	<b>13,200</b>	<b>18,700</b>
<b>5</b>	<b>110,000</b>	<b>11%</b>	<b>12,100</b>	<b>6,600</b>
<b>6</b>	<b>110,000</b>	<b>6%</b>	<b>6,600</b>	<b>0</b>
<b>Total</b>		<b>100%</b>	<b>\$110,000</b>	

# Self-Check

If a business sells an asset for more than its tax book value, then the firm:

- a. Took too little depreciation.
- b. Will increase its taxable income.
- c. Will reduce its taxable income.
- d. Calculated depreciation incorrectly.
- e. Had Al Capone as its CPA.



# Health Reform and Financial Management

- Accountable care organizations (ACOs)
- Industry consolidation
- Population health
- Clinical integration
- Technology
- Staffing shortages



# Three Key Learning Points

- The primary financial goal of investor-owned firms is shareholder wealth maximization, and the primary goal of most not-for-profit firms is to fulfill a mission, which requires financial viability.
- The value of any income stream depends on the amount of usable, or after-tax, income. Thus, tax laws play an important role in financial management decisions.
- The Patient Protection and Affordable Care Act aims to provide all Americans with access to affordable health insurance options and transform the healthcare system to increase quality and reduce costs.





# CHAPTER 1 EXTENSION

This chapter extension focuses on alternative forms of business organization, with emphasis on those that provide healthcare services.



# Forms of Business Organization

There are four major categories of business organization (legal forms of businesses):

- Proprietorship
- Partnership
- Corporation
- Hybrid forms

How important is the organizational form to healthcare finance?



# Proprietorships and Partnerships

- *Advantages*

- Ease of formation
- Subject to few regulations
- Lower total taxes than corporations

- *Disadvantages*

- Difficult to transfer ownership
- Unlimited liability
- Limited life
- Difficult to raise capital



# Corporations

- *Advantages*

- Unlimited life
- Easy transfer of ownership
- Limited liability
- Ease of raising capital

- *Disadvantages*

- Double (or triple) taxation for investor-owned corporations
- Cost of formation and reporting
- C versus S corporations

# Hybrid Forms of Organization

- **Limited partnership (LP)**
  - General partners have control.
  - Limited partners are liable only for their initial contribution.
  - Not commonly used by healthcare providers.
- **Limited liability partnership (LLP)**
  - Partners share general business liability.
  - Partners are liable only for their own malpractice actions.



# Hybrid Forms of Organization (cont.)

- Limited liability company (LLC)
  - Members are taxed like partners.
  - Liability like stockholders.
- Professional corporation (PC) or professional association (PA)
  - Owners have benefits of incorporation.
  - Owners are still liable for malpractice.
  - Often used by individual clinicians.





# Forms of Ownership

- In most industries, the only form of ownership is the investor-owned (for-profit) business.
- In the health services industry, a significant proportion of businesses are organized as not-for-profit corporations.

**How important is the form of ownership to healthcare finance?**



# Investor-Owned Corporations

- Investors become owners by purchasing shares of common stock.
  - Primary market transactions
    - Initial public offerings (IPOs)
    - New common stock sales
  - Secondary market transactions
    - On exchanges
    - In the over-the-counter market
- Stockholders have:
  - Right of control
  - Claim on residual earnings and residual liquidation proceeds



# Not-for-Profit Corporations

- If a business meets a stringent set of requirements, it can qualify as a not-for-profit (nonprofit) corporation; such firms also are called tax-exempt or 501(c)(3) or (c)(4) corporations.
- These corporations:
  - Generally have no shareholders and, hence, do not have a single clientele to which managers are responsible.
  - Receive various tax subsidies.



# Organizational Structures

- Holding companies
- Multihospital systems
- Corporate alliances
- Integrated delivery systems



# Holding Companies

- A holding company is a corporation formed for the sole purpose of owning the stocks of other companies.
- In a typical holding company, the subsidiary companies issue their own debt, but their equity is held by the holding company, which, in turn, sells stock to individual investors.

# Holding Companies (cont.)

- *Advantages*
  - Control with fractional ownership
  - Isolation of risks
  - Separation of FP and NFP subsidiaries
- *Disadvantages*
  - Partial multiple taxation
  - Ease of forced divestiture





# Multihospital Systems

Multihospital systems generally are credited with these advantages:

- Better access to capital
- Elimination of duplicated services
- Economies of scale
- Access to special skills
- Ability to recruit and retain personnel
- Increased political power



# Corporate Alliances

- Corporate alliances occur when two business entities combine for a limited purpose.
- The most common forms of alliance are purchasing groups and joint ventures.



# Integrated Delivery Systems

- Integrated delivery systems allow for the vertical integration of multiple services.
- Such systems may have a single owner or may be created by contractual arrangements among individually owned providers.
- In either case, success requires a system focus as opposed to a single provider focus.

	A	B	C	D	E	F	G	H	I
1	<b>7/15/2019 UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>								
2									
3	<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>								
4									
5	<b>PROBLEM 1</b>								
6	Corporate bonds issued by Johnson Healthcare currently yield 8 percent.								
7	a. If an investor is in the 30 percent tax bracket, what is the bond's after-tax yield?								
8	b. Municipal bonds of equal risk currently yield 6 percent. At what tax rate would an investor be								
9	indifferent between these two bonds?								
10	c. Which bond should an investor in the 30 percent tax bracket invest in?								
11									
12	<b>ANSWER</b>								
13	a.								
14	Pretax rate on corporate bond			8%					
15	Tax rate			30%					
16	After-tax rate on corporate bond			5.6%	=D14*(1-D15)				
17									
18	b.								
19	Rate on municipal bond			6%					
20	Pretax rate on corporate bond			8%					
21	Tax rate			25%	=1-(D19/D20)				
22									
23	c.								
24	After-tax rate on corporate bond			5.6%	=D16				
25	Rate on municipal bond			6%	=D19				
26									
27	The investor should select the municipal bond.								

	A	B	C	D	E	F	G	H	I
1	<b>UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>								
2									
3	<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>								
4									
5	<b>PROBLEM 2</b>								
6	The Klaven Nursing Home has taxable income of \$750,000. The home's depreciation expense is								
7	\$200,000. Klaven is 100 percent equity financed, and it faces a 30 percent tax rate.								
8	a. What is the home's after-tax income?								
9	b. What is its net cash flow?								
10									
11	<b>ANSWER</b>								
12	a.								
13	Taxable income		\$750,000						
14	Tax rate		30%						
15	Taxes		\$225,000	=C13*C14					
16	After-tax income		\$525,000	=C13-C15					
17									
18	b.								
19	After-tax income		\$525,000	=C16					
20	Depreciation		\$200,000						
21	Net cash flow		\$725,000	=C19+C20					

	A	B	C	D	E	F	G	H	I
1	<b>UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>								
2									
3	<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>								
4									
5	<b>PROBLEM 3</b>								
6	Johnson Family Care Inc. is a large ambulatory care center that provides comprehensive 24-hour								
7	primary and specialty care to a large suburban population in Pennsylvania. The center recently								
8	purchased new clinical laboratory equipment for \$1.1 million and spent \$22,000 to renovate a center								
9	room to accommodate the new equipment. The useful life of the equipment is estimated to be ten								
10	years, after which it can be sold for \$75,000. Johnson uses a straight-line method to calculate book								
11	depreciation and pays tax at a rate of 30 percent. The equipment falls into the MACRS seven-year class.								
12	a. What annual depreciation expense will be reported on the income statement for the center?								
13	b. What annual depreciation expense will be reported for tax purposes?								
14	c. Suppose Johnson sells the laboratory equipment at the end of Year 4 for \$400,000. What impact								
15	would this have on the taxes paid by the center?								
16									
17	<b>ANSWER</b>								
18	a.								
19	Capital cost			\$1,100,000					
20	Renovation cost			\$22,000					
21	Salvage value			\$75,000					
22	Useful life			10					
23	Annual depreciation expense			\$104,700	=(D19+D20-D21)/D22				
24									
25	b.								
26	Depreciable basis			\$1,122,000	=D19+D20				
27									
28		Recovery	Depreciation						
29	Year	percentage	expense	Book value					
30	1	14%	\$157,080	\$964,920	=D26-C30				
31	2	25%	\$280,500	\$684,420	=D26-C30-C31				
32	3	17%	\$190,740	\$493,680	=D26-C30-C31-C32				
33	4	13%	\$145,860	\$347,820	=D26-C30-C31-C32-C33				
34	5	9%	\$100,980	\$246,840	=D26-C30-C31-C32-C33-C34				
35	6	9%	\$100,980	\$145,860	=D26-C30-C31-C32-C33-C34-C35				
36	7	9%	\$100,980	\$44,880	=D26-C30-C31-C32-C33-C34-C35-C36				
37	8	4%	\$44,880	\$0	=D26-C30-C31-C32-C33-C34-C35-C36-C37				
38	Total	100%	\$1,122,000						
39									
40	c.								
41	Tax rate			30%					
42	Equipment sale price			\$400,000					
43	MACRS tax book value			\$347,820	=D33				
44	Difference			\$52,180	=D42-D43				
45	Taxes			\$15,654	=D41*D44				
46									
47	\$52,180 would be added to Johnson's operating income and taxed at a rate of 30 percent, resulting								
48	in an increase in its taxes of \$15,654.								



Chapter 1 -- Introduction to Healthcare Financial Management

In-Class Problem

Carolina Nursing Home (CNH) recently purchased new equipment for \$200,000. \$60,000 in building renovations were required to accommodate the new equipment. The useful life of the new equipment is estimated to be 4 years, after which it can be sold for \$20,000. The equipment falls into the MACRS three-year class.

- a. What annual depreciation expense will be reported on the financial statements of CNH?
- b. What annual depreciation expense will CNH report in year 4 for tax purposes?

ANSWER

Step 1 - Identify the relevant data

Capital cost	\$0
Renovation cost	\$0
Salvage value	\$0
Useful life	0

Step 2 - Calculate the annual depreciation expense that will be reported in the financial statements of CNH.

Annual depreciation expense	\$0
-----------------------------	-----

Step 3 - Create a depreciation table to identify annual depreciation expense that CNH will report in year 4 for tax purposes.

Depreciable basis		\$0	
	3-year class		
	recovery	Depreciation	
Year	percentage	expense	Book value
1	33%	\$0	\$0
2	45%	\$0	\$0
3	15%	\$0	\$0
4	7%	\$0	\$0
Total	100%	\$0	

	A	B	C	D	E	F	G	H
1	<b>UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>							
2								
3	<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>							
4								
5	<b>In-Class Problem</b>							
6								
7	Carolina Nursing Home (CNH) recently purchased new equipment for \$200,000. \$60,000 in							
8	building renovations were required to accommodate the new equipment. The useful life of the							
9	new equipment is estimated to be 4 years, after which it can be sold for \$20,000. The equipment							
10	falls into the MACRS three-year class.							
11	a. What annual depreciation expense will be reported on the financial statements of CNH?							
12	b. What annual depreciation expense will CNH report in year 4 for tax purposes?							
13								
14	<b>ANSWER</b>							
15	<b>Step 1 - Identify the relevant data</b>							
16	Capital cost			\$200,000				
17	Renovation cost			\$60,000				
18	Salvage value			\$20,000				
19	Useful life			4				
20								
21	<b>Step 2 - Calculate the annual depreciation expense that will be reported in the financial</b>							
22	<b>statements of CNH.</b>							
23								
24	Annual depreciation expense			\$60,000	=(D16+D17-D18)/D19			
25								
26	<b>Step 3 - Create a depreciation table to identify annual depreciation expense that CNH will</b>							
27	<b>report in year 4 for tax purposes.</b>							
28								
29	Depreciable basis			\$260,000	=D16+D17			
30	3-year class							
31	recovery							
32	Year	percentage	Depreciation expense	Book value				
33	1	33%	\$85,800	\$174,200				
34	2	45%	\$117,000	\$57,200				
35	3	15%	\$39,000	\$18,200				
36	4	7%	\$18,200	\$0				
37	Total	100%	\$260,000					
38								
39			=D\$29*B33		=D29-C33			
40			=D\$29*B34		=D29-C33-C34			
41			=D\$29*B35		=D29-C33-C34-C35			
42			=D\$29*B36		=D29-C33-C34-C35-C36			
43			=SUM(C33:C36)					

	A	B	C	D	E	F	G	H	I
1	7/15/2019	<b>UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>							
2									
3		<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>							
4									
5		<b>Minicase</b>							
6									
7		George Washington Insurance Co. is a large CMS intermediary that serves the midwest states. To							
8		increase the efficiency of its data processing operations, the company recently purchased a large							
9		computer system for \$2,700,000 and spent \$241,175 to renovate a building to accommodate the new							
10		equipment. The useful life of the computer system is estimated to be eight years when it could be sold for							
11		\$100,000, and the equipment falls into the MACRS five-year class. The company uses the straight-							
12		line method to calculate book depreciation and pays tax at a rate of 30 percent. Suppose the firm sells the							
13		computer equipment at the end of Year 4 for \$500,000. What impact would this have on the taxes paid							
14		by the company?							
15									
16		<b>ANSWER</b>							
17		Capital cost		\$2,700,000					
18		Renovation cost		\$241,175					
19		Depreciable basis		\$2,941,175 =D17+D18					
20									
21			Recovery	Depreciation					
22		Year	percentage	expense	Book value				
23		1	20%	\$588,235	\$2,352,940 =D19-C23				
24		2	32%	\$941,176	\$1,411,764 =D19-C23-C24				
25		3	19%	\$558,823	\$852,941 =D19-C23-C24-C25				
26		4	12%	\$352,941	\$500,000 =D19-C23-C24-C25-C26				
27		5	11%	\$323,529	\$176,471 =D19-C23-C24-C25-C26-C27				
28		6	6%	\$176,471	\$0 =D19-C23-C24-C25-C26-C27-C28				
29		Total	100%	\$2,941,175					
30									
31		Tax rate		30%					
32		Equipment sale price		\$500,000					
33		MACRS tax book value		\$500,000 =D26					
34		Difference		\$0 =D32-D33					
35		Taxes		\$0 =D31*D34					
36									
37		Because the equipment sale price equals the MACRS tax book value, there would be no impact on the							
38		taxes paid by the company.							

# 12/28/2018 UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT

## Table of Contents

### Chapter 1 -- Introduction to Healthcare Financial Management

[DEPRECIATION \(PAGE 21\)](#)

[Book depreciation \(page 22\)](#)

[MACRS DEPRECIATION ILLUSTRATION \(PAGE 24\)](#)

Note: Each link takes you directly to that section in the next tab, CH01MODEL.  
Page numbers in parentheses correspond to the textbook.

	A	B	C	D	E	F	G	H	I
1	12/28/2018	<b>UNDERSTANDING HEALTHCARE FINANCIAL MANAGEMENT</b>							
2									
3		<b>Chapter 1 -- Introduction to Healthcare Financial Management</b>							
4									
5		This spreadsheet model performs many of the calculations contained in Chapter 1. We recommend that you use the model in the							
6		following manner:							
7									
8		1. First, recognize that you do not have to use this model at all to understand the basic concepts of this chapter. However,							
9		using the model will increase your understanding of the relevant concepts, and it will surely help when you use spreadsheet							
10		models for other purposes, especially any problem sets or cases assigned for this course.							
11									
12		2. Start by reading the chapter in its entirety.							
13									
14		3. Now place the text alongside your computer with this model on the screen. When you come to an explanation of a calculation							
15		in the text, see if the model has a matching calculation. The Table of Contents tab allows for improved navigation of the model.							
16									
17		4. We assume that you know the basics of Excel, but that you have not encountered some of its features or may need a							
18		refresher or two. So we have built in explanations of how to do some of the functions in the model. As a result, you will learn							
19		more about Excel at the same time you learn about taxes and depreciation.							
20									
21		5. Throughout this model, page numbers of the matching text calculations are provided in pink. Input data are in red on a							
22		yellow background, and output data are in green on a beige background. You are encouraged to change the input data to learn							
23		more about the calculations in the model.							
24									
25									
26		<b>DEPRECIATION (PAGE 21)</b>							
27									
28		<i>Exhibit 1.2 The Effect of Depreciation on Cash Flow</i>							
29									
30		Federal plus state tax rate		30%					
31									
32			Hospital A	Hospital B					
33		Revenue	\$1,000,000	\$1,000,000					
34		Costs except depreciation	\$700,000	\$700,000					
35		Depreciation	\$100,000	\$200,000					
36		Taxable income	\$200,000	\$100,000					
37		Federal plus state taxes	\$60,000	\$30,000					
38		After-tax income	\$140,000	\$70,000					
39		Add back depreciation	\$100,000	\$200,000					
40		Net cash flow	\$240,000	\$270,000					
41									
42		Hospital B's cash flow is larger by $\$270,000 - \$240,000 = \$30,000$ , which represents the tax savings, or tax shield, on its additional							
43		\$100,000 in depreciation expense:							
44		$\text{Tax shield} = \text{Tax rate} \times \text{Depreciation expense} = 0.30 \times \$100,000 = \$30,000.$							
45									
46		Suppose the hospitals were not-for-profit hospitals. If you enter 0 in cell C51, taxes would be zero for both and they would have							
47		\$300,000 in net cash flow. However, Hospital A would report \$200,000 in earnings, while Hospital B would report \$100,000 in							
48		earnings.							
49									
50									
51		<b>Book depreciation (PAGE 22)</b>							
52									
53		The most common method of determining book depreciation is the straight-line method. To apply the straight-line method:							
54		(1) start with the capitalized cost of the asset (generally, price plus shipping plus installation);							
55		(2) subtract the asset's salvage value, which, for book purposes, is the estimated value of the asset at the end of its useful life; and							
56		(3) divide the net amount by the asset's useful life.							
57									
58		Purchase price of machine		\$100,000					
59		Shipping and installation		\$10,000					
60		Salvage value		\$5,000					
61		Useful life in years		10					
62		Book depreciation expense		\$10,500					
63									
64		The name "straight line" comes from the fact that the annual depreciation under this method is constant. The book value of the							
65		asset, which is the cost minus the accumulated depreciation to date, declines evenly (follows a straight line) over time.							
66									
67									
68		<b>MACRS DEPRECIATION ILLUSTRATION (PAGE 24)</b>							
69									
70		The calculation of MACRS depreciation uses three components:							

	A	B	C	D	E	F	G	H	I
71	(1) the depreciable basis of the asset, which is the total amount to be depreciated;								
72	(2) a recovery period that defines the length of time over which the asset is depreciated; and								
73	(3) allowance percentages for each recovery period, which, when multiplied by the basis, give each year's depreciation expense.								
74									
75	<i>Exhibit 1.4 MACRS Recovery Allowances</i>								
76									
77	<b>Ownership</b>		<b>Recovery Period</b>						
78	<b>Year</b>	<b>3-Year</b>	<b>5-Year</b>	<b>7-Year</b>	<b>10-Year</b>				
79	1	33%	20%	14%	10%				
80	2	45%	32%	25%	18%				
81	3	15%	19%	17%	14%				
82	4	7%	12%	13%	12%				
83	5		11%	9%	9%				
84	6		6%	9%	7%				
85	7			9%	7%				
86	8			4%	7%				
87	9				7%				
88	10				6%				
89	11				3%				
90	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>				
91									
92	<b>MACRS 5-Year Example:</b>								
93									
94	<b>Purchase price of machine</b>		<b>\$100,000</b>						
95	<b>Shipping and installation</b>		<b>\$10,000</b>						
96	<b>Depreciable basis</b>		<b>\$110,000</b>						
97									
98		<b>Recovery</b>	<b>Tax depreciation</b>						
99	<b>Year</b>	<b>percentage</b>	<b>expense</b>	<b>Tax book value</b>					
100	1	20%	\$22,000	\$88,000					
101	2	32%	\$35,200	\$52,800					
102	3	19%	\$20,900	\$31,900					
103	4	12%	\$13,200	\$18,700					
104	5	11%	\$12,100	\$6,600					
105	6	6%	\$6,600	\$0					
106	<b>Total</b>	<b>100%</b>	<b>\$110,000</b>						
107									
108	According to the IRS, the value of a depreciable asset at any point in time is its tax book value. If a business sells an asset for more								
109	than its tax book value, the implication is that the firm took too much depreciation, and the IRS will want to recover the excess tax								
110	benefit. Conversely, if an asset is sold for less than its book value, the implication is that the firm did not take sufficient depreciation,								
111	and it can take additional depreciation on the sale of the asset.								
112									
113	<b>If the machine above is sold after Year 2:</b>								
114									
115	<b>Sale price of machine</b>		<b>\$60,000</b>						
116	<b>Tax book value</b>		<b>\$52,800</b>						
117	<b>Change in taxable income</b>		<b>\$7,200</b>						
118									
119									
120									