

B2 (2) – 1

AMH Inc. is planning to make several capital investments over the next year and needs to establish a hurdle rate to use to evaluate its investment options. After much discussion, the controller has determined that the company's weighted average cost of capital (WACC) will be used as the hurdle rate. She has provided you with the following information and has asked you to use it to calculate the company's WACC.

Balance Sheet Extracts as of December 31, Year 5




Long-term liabilities		
7% Bonds issued at par (par value \$1,000)		\$ 3,000,000
Equity		
12% Preferred stock (par value \$10 share)	1,000,000	
Common stock (par value \$0.50/share)	4,000,000	
Additional paid-in capital	18,000,000	
		<u>23,000,000</u>
		<u>\$ 26,000,000</u>

The preferred stock of AMH Inc. has a market value of \$12 per share. The 7% bonds have a market value of \$1,045 per bond and a pre-tax cost of 6.86% per year.

The common stock of AMH Inc. has a market value of \$4.70 per share and an ordinary dividend of \$0.363 per share has just been paid. The historic growth rate of ordinary dividends is 4.1%.

AMH Inc. pays income tax at an annual rate of 30% per year.

Based the information above, calculate each of the components of AMH's weighted average cost of capital and use these amounts to calculate the overall weighted average cost of capital. Enter the amounts in column B. Round dollar amounts to the nearest dollar and percentages to one decimal place.

  		
	A	B
1	WACC Component	Amount
2	Cost of retained earnings	
3	Cost of preferred stock	
4	After-tax cost of debt	
5	Total market value of common stock	
6	Total market value of preferred stock	
7	Total market value of bonds	
8	Weighted average cost of capital	

B2 (2) – 2

WWW Inc. is a listed company that is seen as a potential target for acquisition by financial analysts. The value of the company has therefore been a matter of public debate in recent weeks. The controller of WWW has asked you to use the information that she has gathered to calculate the value of the company and its debt using various methodologies.

Use the information in the Resources tab to calculate the value of WWW's debt and equity using the indicated valuation methods. Enter the calculated amounts in column B.

	A	B
1	Valuation Method	Amount
2	1. Total book value of equity	
3	2. Market capitalization	
4	3. Total value of equity using sector P/E	
5	4. Total value of equity using dividend discount model	
6	5. Total market value of 8% bonds	

[Resource]

[Resources](#)

[Exhibit 1: Select Financial Information for WWW Inc.](#)

[Exhibit 2: Balance Sheet Information for Year 6](#)

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[Exhibit 1: Select Financial Information for WWW Inc.](#)

Year	Year 4	Year 5	Year 6
Net income (\$m)	8,900,000	9,700,000	10,100,000
Total dividends (\$m)	5.2	5.6	6.0

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[Exhibit 2: Balance Sheet Information for Year 6](#)

Current assets	
Inventory	3,800,000
Accounts receivables	4,500,000
Non-current assets	<u>91,000,000</u>
Total assets	99,300,000
Current liabilities	7,100,000
Non-current liabilities	
8% bonds	25,000,000
Stockholders' equity	
Common stock at par	20,000,000
Retained earnings	<u>47,200,000</u>
Total liabilities and stockholders' equity	99,300,000

- The common stock of WWW Inc. has a nominal (par) value of \$0.50 per share and a market value of \$4.00 per share.
- WWW Inc. has a beta factor of 1.5, the market risk premium is 4%, and the risk-free rate is 3%.
- The business sector of WWW Inc. has an average price/earnings (P/E) ratio of 17 times.
- The 8% bonds have a current market value of \$1,111.60 per bond and the pretax cost of debt of WWW Inc. is 6% per year.
- The growth rate of dividends over the last three years has been 6.27%.

B2 (2) – 3

Spot Inc. is considering how to finance the acquisition of a machine costing \$750,000 with an operating life of five years. The company is considering the following two financing options:

- **Option 1:** The machine could be acquired by lease for an annual lease payment of \$155,000 per year, payable at the beginning of each year. The machine would be returned to the lessor at the end of the lease.
- **Option 2:** The machine could be bought for \$750,000, financed by a bank loan. At the end of five years, the machine would have a scrap value of 10% of the purchase price.

Spot Inc.'s after-tax cost of borrowing and weighted average cost of capital is 7%. Ignore the impact of taxes.

Use the information above and the information in the resources tab to complete the following tables.

- In Part 1, enter the present value of the net cash outflow of each option in Column B, rounded to the nearest dollar. Net outflows should be entered as negative.
- In Part 2, enter the advantages of each option in Column B by selecting from the drop-down menu.
- In Part 3, indicate in Column B whether the company should lease or buy the machine by selecting from the drop-down menu.

Part 1

✕ ✓ fx		
	A	B
1	Present Value of Net Cash Outflow:	Amount
2	Option 1	
3	Option 2	

Part 2

Advantages of:	Advantages
Option 1	
Option 2	

Part 3

	Decision
Which option should Spot Inc. choose?	

[Resource]

Resources - Present Value Factors

Present value of \$1 at 7% for 1 period	0.935
Present value of \$1 at 7% for 2 period	0.857
Present value of \$1 at 7% for 3 period	0.816
Present value of \$1 at 7% for 4 period	0.763
Present value of \$1 at 7% for 5 period	0.713
Present value of an annuity of \$1 at 7% for 1 period	0.935
Present value of an annuity of \$1 at 7% for 2 period	1.802
Present value of an annuity of \$1 at 7% for 3 period	2.622
Present value of an annuity of \$1 at 7% for 4 period	3.387
Present value of an annuity of \$1 at 7% for 5 period	4.100

Pop-up 1 (Advantages)	Pop-up 2 (Decision)
<div>Select Item</div> <div>Fixed finance cost</div> <div>Less expensive option</div> <div>Machine can be sold at any time</div> <div>No impact on financial leverage</div> <div> <div>Ok</div> <div>Cancel</div> </div>	<div>Select Item</div> <div>Option 1</div> <div>Option 2</div> <div> <div>Ok</div> <div>Cancel</div> </div>

B2 (2) – 4

Alejo Inc. is concerned that although the company's profits have increased significantly over the past three years, its cash balance has declined. The controller has asked you to analyze financial metrics related to the company's cash conversion cycle and liquidity and to provide some possible explanations for the declining cash position. All sales were on credit. Credit purchases in each year equaled cost of sales. Assume that there are 365 days in the year.

Using the information in the Resources tab, complete the two tables below.

- In Part 1, calculate the required financial metrics for Year 5 and Year 6. Round time periods to the nearest day and round other metrics to two decimal places.
- In Part 2, double click in the associated shaded cell and select from the list the best possible explanation for the change in the given financial metric from Year 5 to Year 6.

Part 1:

	A	B	C
1	Financial Metric	Year 6	Year 5
2	Inventory conversion period (days)		
3	Receivables collection period (days)		
4	Payables deferral period (days)		
5	Cash conversion cycle (days)		
6	Acid-test ratio		

Part 2:

Financial Metric	Possible Explanation
Inventory conversion period	
Change in receivables collection period	
Change in payables deferral period	

[Resource]

Exhibit 1: Financial Statement Extracts

<i>Income Statement</i>	Year 6	Year 5	Year 4
Revenue	15,600	11,100	6,600
Cost of sales	<u>9,300</u>	<u>6,600</u>	<u>3,900</u>
Gross profit	6,300	4,500	2,700
Administration expenses	<u>1,000</u>	<u>750</u>	<u>500</u>
Profit before interest and tax	5,300	3,750	2,200
Interest	<u>100</u>	<u>15</u>	<u>15</u>
Profit before tax	5,200	3,735	2,185

<i>Balance Sheet</i>	Year 6	Year 5	Year 4
Current assets			
Cash	120	900	1,680
Receivables	3,800	1,850	1,150
Inventory	<u>3,000</u>	<u>1,300</u>	<u>700</u>
	6,920	4,050	3,530
Current liabilities			
Accounts payable	2,870	1,600	600
Notes payable	<u>1,000</u>	<u>150</u>	<u>150</u>
	3,870	1,750	750

Pop-up
(Possible Explanation)

Select Item

Introduction of debt factoring

Machine breakdowns

Rejecting suppliers' quick payment discounts

Introducing kanban inventory management

Rising payables turnover

Customers rejecting quick payment discounts

Rising inventory turnover

Ok

Cancel

B3 (2) – 1

Watson Inc. is a manufacturing company operating in the southeastern United States. The company has three primary product lines, as well as several "secondary" lines. The company's controller is in the process of preparing the annual financial statements and will need to classify the following cost objects as either product costs or period costs. For each of these costs, determine the amounts that will be considered product costs versus the amounts that will be considered period costs.

<div> <div>✕</div> <div>✓</div> <div>fx</div> </div>			
	A	B	C
1	Cost Object	Product Costs	Period Costs
2	1. Watson paid \$2.5 million in interest costs for a new debt issuance—the proceeds were used to fund the construction of a new manufacturing plant.		
3	2. Payments to SE EMC, the utilities company which provides both gas and electric to Watson, totaled \$3.6 million for the year.		
4	3. The invoice price for raw materials for the year totaled \$9,415,200, which included a discount of 2 percent off of the original purchase prices and freight-in of \$7,200.		
5	4. Watson spent \$5.1 million on advertising costs during the year, with \$350,000 of the total representing the salaries of the staff in the promotions department.		
6	5. Rent costs for several buildings located outside of the company's main campus and used to manufacture secondary product lines totaled \$7.2 million.		
7	6. Salaries associated with staff members in Watson's Human Resources and General Counsel departments totaled \$5.9 million.		
8	7. The company's factory workers at the main plant average an annual salary of \$55,000 per year, with fringe benefits costing the company 15 percent of salary per worker. There are 50 factory workers at the main plant.		
9	8. Watson also employs a custodial staff of 15 employees at its main plant; these employees earn an average of \$30,000 per year with fringe benefits costing the company on average 25 percent of labor costs for this group.		

B3 (2) – 2

A production supervisor for Lincoln Company is comparing his budget to actuals for inventory components in May. He has asked you to prepare two documents which will be sent to the division finance officer. The first is a cost of goods manufactured statement which will require you to derive the individual components of total manufacturing costs. The second is a one-page analysis document which will highlight specific sensitivities and relative comparison points.

Using the information included within the Resources tab, complete the table below for the month ended May, Year 6.

- For Questions 1–3, calculate the required costs identified in column A, and enter your associated response rounded to whole numbers in column B. If a response is zero, enter a zero (0).
- For Questions 4–8, use the drop-down menu below and enter your response in column B.

<div> <div>✕</div> <div>✓</div> <div>fx</div> </div>		
	A	B
1	Cost Item	Amount
2	1. Raw materials used	
3	2. Direct labor	
4	3. Overhead applied	

Situation	Answer
4. Relative to raw materials used, raw materials purchased are:	
5. Relative to cost of goods sold, cost of goods manufactured is:	
6. If labor hours budgeted were 21,000 hours, cost of goods sold would be:	
7. If actual labor hours were 20,200, manufacturing costs would be:	
8. If ending finished goods inventory totaled 68,450, the impact on cost of goods manufactured would be:	

[Resource]

Lincoln Company—Inventory Items: May Year 6

Raw Materials Components	Pounds	Price/lb.
Beginning raw materials	1,650	\$ 4.50
Purchased raw materials	4,725	\$ 5.00
Ending raw materials	1,470	\$ 5.00

WIP Components

Labor hours budgeted	20,000
Labor hours actual	19,850
Wage rate/hour	\$ 9.00
Budgeted overhead <i>(Labor hours as cost driver)</i>	\$ 120,000
Beginning WIP	\$ 49,500
Ending WIP	\$ 41,650

FG Components

Beginning finished goods	\$ 63,200
Ending finished goods	\$ 67,450

**Pop-up
(Answer)**

Select Item

Higher

Lower

No impact

Ok

Cancel

B3 (2) – 3

Bennett Corporation is a petroleum manufacturer which produces several sets of joint products; these products include kerosene and fuel oil, liquid asphalt and gasoline, and coal tar and paraffin. A senior cost accountant for Bennett has been asked by her boss to take all three sets of products and allocate the associated joint costs based on three different allocation methodologies.

Using the information included within the resources tab, complete the table below for Year 4.

- For Questions 1–6, calculate the allocated joint costs identified in column A, and enter your associated response rounded to whole numbers in column B. If a response is zero, enter a zero (0).

✕ ✓ fx		
	A	B
1	Product	Allocated Joint Costs
2	1. Kerosene	
3	2. Fuel oil	
4	3. Liquid asphalt	
5	4. Gasoline	
6	5. Coal tar	
7	6. Paraffin	

[Resource]

Bennett Corporation Year 4 Production	
Kerosene and Fuel Oil—Allocation by Unit Volume	
Kerosene—3,500 gallons/mt. for 3 months and 4,260 gallons/mt. for 9 months	
Fuel oil—8,490 gallons/mt. for 4 months and 10,000 gallons/mt. for 8 months	
Joint costs: \$45,000	
Liquid Asphalt and Gasoline—Relative NRV (Sales Value Known at Split-Off)	
Liquid asphalt—2,850 gallons sold at \$13/unit	
Gasoline—1,900 gallons sold at \$18/unit	
Joint costs: \$6,500	
Coal Tar and Paraffin—Relative NRV (No Sales Value Known at Split-Off)	
Coal tar—4,000 pounds sold at \$40/unit; further processing costs: \$52,000	
Paraffin—2,800 pounds sold at \$60/unit; further processing costs: \$36,000	
Joint costs: \$80,000	

B4 (2) – 1

The costing manager for B.E. Industries is tasked with forecasting expected breakeven and profitability levels for its Cost Cover Division. Although the expectation is that the division will be profitable next year, the fear is that continued slow growth in the local economy will cause the division to struggle to reach breakeven. As part of the forecast, the manager must be prepared to explain the impact on various cost components of changes in certain assumptions.

Using the information included within the Resources tab, complete the tables below for B.E. Now Industries.

- For Table 1, calculate the required amounts identified in column A and enter your associated response in units or dollars in column B.
- For Table 2, determine the impact of the change identified in the first column and enter the impact in second column.

Table 1:

X ✓ fx	
1	A
2	B
3	Calculation
4	Amount
1.	Breakeven point (in units)
2.	Breakeven point (in dollars)
3.	Units needed to earn desired profit
4.	Sales dollars needed for desired profit

Table 2:

Change	Impact
5. Impact on the contribution margin if fixed costs increase by \$40,000	
6. Impact on the contribution margin ratio if per unit sales and variable costs both decrease by \$10	
7. Impact on total variable costs if the desired pretax profit increases by \$50,000	
8. Impact on breakeven in units if tax rate decreases to 30 percent	

[Resource]

B.E. NOW INDUSTRIES—Cost Cover Division	
Variable Costing Components	Actuals
Sales price (per unit)	\$90
Variable costs (per unit)	\$63
Fixed costs	\$810,000
Desired pretax profit	\$135,000
Tax rate	35%

Pop-up
(Impact)

Select Item

Increase

Decrease

No Impact

Ok

Cancel

B4 (2) – 2

Bill Gerard, the controller for Quick Turn-Around Co., is using final Year 5 financial numbers to forecast various ratios for Year 6. The directive from his boss (Kim Sanford, CFO) is to focus on activity ratios, but Gerard would also like to show one high-level profitability ratio in order to focus the follow-up discussion on managing costs and projected profitability. Gerard also needs to be prepared to explain the key drivers of the changes in the ratios from Year 5 to Year 6.

Using the information included within the Resources tab, complete the table below for Quick Turn-Around Co.

- Calculate the required amounts identified in column A for Year 6 and enter your associated response in dollars or as a ratio where applicable (rounded to two decimal places) in column B.
- For the ratios identified in column A, determine the primary driver for the change in the ratio from Year 5 and enter the reason in column C using the choices from the drop-down menu.

	A	B	C
1	Calculation	Amount	Primary Driver
2	1. Inventory conversion period		
3	2. Receivables collection period		
4	3. Payables deferral period		
5	4. Operating cycle		
6	5. Cash conversion cycle		
7	6. Gross margin ratio		

[Resource]

[Resources](#)

[Exhibit 1: Select Financial Statement Line Items](#)

[Exhibit 2: Calculated Ratios](#)

[Exhibit 3: Memorandum](#)

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[Exhibit 1: Select Financial Statement Line Items](#)

QUICK TURN-AROUND CO.			
Select Financial Statement Line Items	Year 4 (actual)	Year 5 (actual)	Year 6
<i>Income Statement</i>			
Net sales	\$3,610,000	\$3,975,000	\$4,194,420
Cash sales	722,000	795,000	831,570
Credit sales	2,888,000	3,180,000	3,362,850
Cost of good sold	2,346,500	2,583,750	2,767,196
Gross margin	1,263,500	1,391,250	1,427,224
<i>Balance Sheet</i>			
Inventory	\$375,000	\$395,000	\$422,650
Gross receivables	445,000	490,000	518,175
Allowance for doubtful accounts	17,800	19,600	20,727
Net receivables	427,200	470,400	497,448
Accounts payable	295,000	325,000	334,750

Exhibit 2: Calculated Ratios

QUICK TURN-AROUND CO.	
Calculated Ratios	Year 4 (actual)
Inventory conversion period	54.39
Receivables collection period	51.51
Payables deferral period	43.79
Operating cycle	105.90
Cash conversion cycle	62.11
Gross margin ratio	0.35

Exhibit 3: Memorandum

To: Ms. Kim Sanford
Chief Financial Officer

From: Bill Gerard
Controller

Date: February 11, Year 6

Re: FY20X6 Projections

Now that we have closed the books on FY Year 5 financials, we are in a position to provide updated assumptions for several key line items on the FY Year 6 financial statements. The focus of the assumptions contained within this memo is on activity ratios and cash management. As you will see from the attached exhibits, we are forecasting increases in several key financial indices which will impact our projected Year 6 bottom line. The assumptions relevant to the attached exhibits are as follows:

Income Statement Items

For both Year 4 and Year 5, cash sales and credit sales represented 20% and 80%, respectively, of overall net sales. We are projecting that cash sales will grow by 4.60% in Year 6 while credit sales will grow by 5.75%. Cost of goods sold has been a consistent 65% of total net sales across Year 4 and Year 5. Due to expected increases in inventory costs, we are projecting growth of 7.1% in cost of goods sold in Year 6.

Balance Sheet Items

As noted above, inventory costs are expected to rise 7.0% from Year 5 levels. Gross accounts receivable are expected to increase 5.75%, in line with increases in forecasted credit sales. Due to relatively calm economic conditions, we are conservatively keeping our allowance for doubtful accounts at 4% of gross receivables. On the payables side, our plan is to take advantage of recent discount offerings for early payments; this allows us to forecast a slower growth rate of 3.0%.

Further updates focused more on income statement line items and projected profitability measures will follow within the next week.

**Pop-up
(Primary Driver)**

Select Item

Change in net sales

Change in cost of goods sold

Change in average inventory

Change in average gross receivables

Change in average net receivables

Change in average accounts payable

Ok

Cancel

B4 (2) – 3

Ben Lamden is a new junior accountant in the Top Products Division. Lisa Walters is a production manager and one of Ben's higher-level supervisors. Lisa recently received a brief analysis from Ben regarding the fiscal year performance of one of the division's product lines. She would like for Ben to expand his analysis so that she not only knows the results themselves, but also understands why actual performance differed from expected performance.

Using the information included within the Resources tab, complete the performance report for the Brink product line by entering the correct amount in each cell. Total operating income will automatically calculate.

Then compute the flexible budget variances and indicate whether each variance is favorable or unfavorable.

<div> ✕ ✓ fx </div>				
	A	B	C	D
1	Performance Report	Master Budget	Flexible Budget @ Actual	Actual Results
2	Units			
3	Sales			
4	Variable costs			
5	Contribution margin			
6	Fixed costs			
7	Operating income	\$0	\$0	\$0

<div> ✕ ✓ fx </div>		
	A	B
1	Calculate	Amount
2	1. Total variance	
3	2. Volume variance	
4	3. Flexible budget variance	

[Resource]

To: Ben Lamden, Junior Accountant, Top Products Division
From: Lisa Walters, Production Manager, Top Products Division
Date: January 25, 20X6
Subject: More Analysis Needed

Hello Ben,

I would like to thank you for sending me the fiscal year-end information for our main Top Products line. I first want to confirm the data you previously provided.

Per your note, we began the fiscal year expecting to sell 36,000 units at \$12.00 per unit. The budgeted contribution margin was 16% and fixed costs were budgeted at \$28,000. Actual sales for the year were 37,500 units, which totaled \$487,500. Actual variable and fixed costs were \$405,000 and \$36,500, respectively. Please let me know if any of the data I have written above is incorrect.

I would like you to now take this a few steps further. From an operating income perspective, I would like to know how we actually performed versus how we expected to perform. Then within that, I would like to know how much of that performance related to higher unit sales versus how much related to other factors. I recommend using a flexible budget analysis, which will allow you to look at sales and costs at a per unit level. I think this analysis will help us determine what the factors are that are driving the differences between actual versus expected performance.

If you could take a look at this over the next day or so, then I will set up a meeting for tomorrow afternoon for us to discuss.

Thank you!

Lisa

**Pop-up
(Favorable/Unfavorable)**

Select Item

Favorable

Unfavorable

Ok

Cancel

B4 (2) – 4

As part of the annual budget process, Rich Render has to present his forecasted manufacturing costs for the Transmode Product Line for the upcoming fiscal year. Render's task is to develop a budget for materials, labor, and overhead costs based on projected sales and production for the year. He has asked you to prepare the budget for the month of March through the development of a template that can be used to easily adjust variables if needed.

Using the information included within the Resources tab, complete the table below:

- For the table below, calculate the answers to the questions in column A for the month of March and enter your associated response in dollars or units as appropriate in column B (round to whole numbers).

<div> <div>✕</div> <div>✓</div> <div>fx</div> </div>		
	A	B
1	Projection (March Totals)	Amount
2	1. Sales (in units)	
3	2. Production (in units)	
4	3. Direct materials usage (in dollars)	
5	4. Direct labor costs (in dollars)	
6	5. Variable overhead costs (in dollars)	
7	6. Fixed overhead costs (in dollars)	

[Resource]

Rickard Enterprises—March Budget

FACTS

Total Sales per Quarter (sales are even per month)

Quarter	Units	Price/Unit
Q1	4,200	\$18
Q2	6,600	\$21
Q3	5,900	\$20
Q4	9,700	\$22

Inventories for March

	Beginning	Desired Ending
Raw materials inventory (in lbs.)	1,120	1,760
Raw materials inventory (in \$)	\$8,960	\$14,080
Finished goods (FG) inventory (in units)	280	440
Finished goods inventory (in \$) (20% safety stock desired)	\$41,500	\$34,500

Other Information:

Pounds of materials needed to produce each unit of FG	4
Cost per lb. of raw material	\$8
Labor hours needed per unit	0.75
Hourly wage rate:	\$16
VOH rate (based on direct labor hours)	\$4.00
Fixed overhead (annual):	
Rent	\$19,200
Utilities (fixed monthly rate)	\$9,000
Property taxes	\$7,500