

§3. WORKING WITH FINANCIAL STATEMENTS

FIN 360: PRINCIPLES OF FINANCIAL MANAGEMENT
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SOURCES AND USES OF CASH

Sources of cash are activities that bring in cash, including:

- Decrease in an asset account:
 - Decrease in accounts receivable (receiving cash and decreasing money the firm has yet to be paid)
 - Decrease in inventory (selling inventories)
 - Decrease in fixed assets (selling off fixed assets)

- Increase in a liability or equity account:
 - Increase in accounts payable (effectively “borrowed” cash)
 - Increase in other current liabilities (effectively “borrowed” cash)
 - Increase in common stock (cash increases as stock issued)

Uses of cash are activities that result in cash expenditures, including:

- Increase in an asset account:
 - Increase in receivables (spending cash and increasing money to be paid to the firm later)
 - Increase in inventory (buying inventories)
 - Increase in fixed assets (purchasing fixed assets)

- Decrease in liability or equity account:
 - Decrease in accounts payable (cash paid, reducing amounts due)
 - Decrease in other current liabilities (cash paid for other previously due accounts)
 - Decrease in common stock ([firm repurchases its own stock](#))¹



Think carefully about these relationships. They may seem counterintuitive at first.
In sum:

Sources: ↓Assets ↑Liabilities

Uses: ↑Assets ↓Liabilities

CONSTRUCTING THE STATEMENT OF CASH FLOW

Recall the **Statement of Cash Flow** consists of **operating**, **investing**, and **financing** activities. The change in cash at a firm (as reflected on the balance sheet) is the cash inflows minus the cash outflows.

Figure 1: Royal Caribbean's Statement of Cash Flow



ROYAL CARIBBEAN CRUISES LTD.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Operating Activities			
Net (Loss) Income	\$ (5,260,499)	\$ (5,775,130)	\$ 1,907,600
Adjustments:			
Depreciation and amortization	1,292,878	1,279,254	1,245,942
Impairment and credit losses	82,001	1,566,380	—
Net deferred income tax (benefit) expense	(42,979)	(8,791)	7,745
(Gain) loss on derivative instruments not designated as hedges	(1,492)	49,316	(1,431)
Share-based compensation expense	63,638	39,779	75,930
Equity investment loss (income)	135,469	213,286	(230,980)
Amortization of debt issuance costs	125,116	89,442	31,991
Amortization of debt discounts and premiums	123,439	66,776	31,616
Loss on extinguishment of debt	138,759	41,109	6,326
Currency translation adjustment losses	—	69,044	—
Change in fair value of contingent consideration	—	(45,126)	18,400
Changes in operating assets and liabilities:			
(Increase) decrease in trade and other receivables, net	(181,707)	121,055	(9,898)
(Increase) decrease in inventories	(34,527)	27,077	(8,533)
(Increase) decrease in prepaid expenses and other assets	(152,071)	295,876	15,669
Increase (decrease) in accounts payable	188,518	(133,815)	75,281
(Decrease) increase in accrued interest	(694)	182,578	(4,460)
Increase (decrease) in accrued expenses and other liabilities	235,446	(180,479)	96,490
Increase (decrease) in customer deposits	1,426,647	(1,643,560)	280,139
Dividends received from unconsolidated affiliates	—	2,215	150,177
Other, net	(15,757)	12,061	28,362
Net cash (used in) provided by operating activities	(1,877,815)	(3,731,653)	3,716,366
Investing Activities			
Purchases of property and equipment	(2,229,704)	(1,965,131)	(3,024,663)
Cash received on settlement of derivative financial instruments	44,492	15,874	7,621
Cash paid on settlement of derivative financial instruments	(74,249)	(161,335)	(68,836)
Investments in and loans to unconsolidated affiliates	(70,228)	(100,609)	(25,569)
Cash received on loans to unconsolidated affiliates	31,334	21,086	32,870
Proceeds from the sale of property and equipment and other assets	176,039	27,796	—
Other, net	(22,423)	(16,247)	(12,829)
Net cash used in investing activities	(2,144,739)	(2,178,566)	(3,091,406)
Financing Activities			
Debt proceeds	4,467,789	13,547,189	3,525,564
Debt issuance costs	(201,698)	(374,715)	(50,348)
Repayments of debt	(2,296,990)	(3,845,133)	(4,060,244)
Premium on repayment of debt	(135,372)	—	—
Proceeds from issuance of commercial paper notes	—	6,765,816	26,240,540
Repayments of commercial paper notes	(414,570)	(7,837,635)	(25,613,111)
Purchase of treasury stock	—	—	(99,582)
Dividends paid	—	(326,421)	(602,674)
Proceeds from common stock issuances	1,621,860	1,431,375	—
Other, net	(442)	(10,688)	(10,516)
Net cash provided by (used in) financing activities	3,040,577	9,349,788	(670,371)
Effect of exchange rate changes on cash	(727)	1,167	1,297
Net (decrease) increase in cash and cash equivalents	(982,704)	3,440,736	(44,114)
Cash and cash equivalents at beginning of year	3,684,474	243,738	287,852
Cash and cash equivalents at end of year	\$ 2,701,770	\$ 3,684,474	\$ 243,738



Notice why the separation of cash flows into operating, investing, and financing activities is important. Consider the three firms below:

Cash Flows	Firm 1	Firm 2	Firm 3
<i>Operating</i>	\$400	\$0	(\$250)
<i>Investing</i>	(\$250)	\$400	\$0
<i>Financing</i>	\$0	(\$250)	\$400
Net increase (decrease) in cash	\$150	\$150	\$150

Based on only the information presented, comment on the health of the cash flows of each.

To construct the statement of cash flow, we translate income statement and balance sheet items into their relevant cash amounts. We compute the difference in balance sheet items and address any non-cash expenses, such as depreciation and amortization.



Be mindful of whether changes in the various accounts are sources or uses of cash. Carefully note the signs (+ or -) of the cash flows.



PRACTICE: Given the financial statement information below, construct a statement of cash flow. Use the Excel file [Statement of Cash Flow and Ratios](http://josephfarizo.com/fin360.html) available at josephfarizo.com/fin360.html to see additional examples.

SOLUTION: First, find the difference in balance sheet items from the previous year to the current year. Be mindful to subtract the earlier year *from* the most recent year, and keep track of the signs.

CONSOLIDATED BALANCE SHEET			
(in millions)			
	2023	2022	Difference
ASSETS			
Current assets			
Cash and cash equivalents	\$ 726	\$ 576	
Accounts receivable	162	165	
Inventories	409	404	
Total current assets	1,297	1,145	
Fixed Assets			
Gross property and equipment	\$ 2,503	\$ 2,606	
Accumulated Depreciation	(314)	(161)	
Net plant and equipment	2,189	2,445	
Total assets	3,486	3,590	
LIABILITIES AND EQUITY			
Current liabilities			
Accounts payable, other accrued liab.	\$ 300	\$ 315	
Notes payable	198	202	
Total current liabilities	498	517	
Long term debt	\$ 496	\$ 501	
Total liabilities	\$ 994	\$ 1,018	
Owners Equity			
Common stock and paid-in surplus	\$ 354	\$ 546	
Retained earnings	2,138	2,026	
Total equity	\$ 2,492	\$ 2,572	
Total liabilities and equity	\$ 3,486	\$ 3,590	

Next, identify if the change from one period to the next is a “source” or a “use” of cash. In this example, assume the firm pays dividends of \$318, has a net income of \$430, and a depreciation expense of \$153.

SOURCES AND USES (in millions)			
	<u>Flow</u>	<u>Source/Use</u>	<u>Hint</u>
Accounts Receivable			A/R falls as firm collects
Accounts Payable			A/P falls as firm pays
Inventory			Firm pays to increase inventory
Gross Fixed Assets			Firm sells fixed assets
Notes Payable			N/P falls as firm pays
Long Term Debt			LTD falls as firm pays off loans
Common Stock			C/S falls as firm “repurchases” shares
Dividends			Dividends paid to investors

Now, complete the statement of cash flows by sorting the accounts into *Operating*, *Financing*, and *Investing* activities. Begin by “adding back” Depreciation to Net Income.



Again, be careful with the signs! Use the above table with *sources* and *uses* you’ve just created. *Sources* will be increases to cash while *uses* will be reductions in cash in the statement of cash flow.



- Use gross fixed assets instead of net fixed assets because net fixed assets includes non-cash depreciation.
- The cash flow we compute in the statement of cash flow matches the change in cash from 2022 to 2023 that we computed above.
- The retained earnings on the balance sheet in the most recent year is the retained earnings in the preceding year plus the net income earned and minus the dividends paid.

STATEMENT OF CASH FLOW	
(in millions)	
<u>Operating Activities</u>	
Net Income	\$
Depreciation	
Accounts Receivable	
Accounts Payable	
Inventory	
<i>CF from Operating Activities</i>	\$ 566
<u>Investing</u>	
Gross Fixed Assets	
<i>CF from Investing Activities</i>	\$ 103
<u>Financing</u>	
Notes Payable	
Long Term Debt	
Common Stock	
Dividends	
<i>CF from Financing Activities</i>	\$ (519)
<i>Cash Flow</i>	\$ 150

INTERPRETATION: A common investment banking interview question is “if you can only have one financial statement to evaluate a firm, which would it be, and why?” The answer is the *statement of cash flow* because it reflects the true cash generating ability of a firm. Often, a follow-up trick question is “if you can only have two statements, which would you choose?” The answer is the *balance sheet and the income statement*: with those two, you can build the statement of cash flow!

FINANCIAL STATEMENT ANALYSIS

Understanding the cash generating ability of a firm by examining its statement of cash flow is a crucial first step in analyzing a company. **Financial statement analysis** goes further in analyzing a company’s financial statements for decision-making purposes. It has both *internal* and *external* uses.

INTERNAL USES

- Performance evaluation for managers, comparing divisions, and compensation
- Planning for the future, a guide for estimating future cash flows

EXTERNAL USES

- Creditors (the lenders) assessing the financial strength of the firm and the likelihood they will be paid back
- Suppliers understanding the reliability of their customer
- Customers predicting the longevity of the firm
- Stockholders and investors determining the profitability and growth prospects of the firm

COMPARISON AND BENCHMARKING

The dollar values on the financial statements are difficult to compare from one firm to another. Two ways that we overcome this challenge are with **common size statements** (or **standardized statements**) and **ratio analysis**.

Common Size Statements

Common size statements present balance sheet items *as a percentage of total assets* and income statement items *as a percentage of net revenue*. There is no clear “denominator” for the statement of cash flows, though you might present each source or use of cash as a percentage of total sources and total uses of cash.

Once we compute common size values, we can **benchmark** to the firm’s (1) own past and to (2) its peers within its same industry. Firms self-report their **SIC Code**, a 4-digit identifier that increases in granularity with more digits. Comparable firms often share the same first 2 or 3 digits.²



EXAMPLE: Using the common size statements below, comment on how the firm's (1) liquidity, (2) selling/buying on credit, (3) use of long-term assets and growth, and (4) use of long-term debt and equity financing changes.

CONSOLIDATED BALANCE SHEET					
(in millions)					
	2023	2022	2023	2022	Industry 2023
ASSETS					
Current assets					
Cash and cash equivalents	\$ 726	\$ 576	21%	16%	4%
Accounts receivable	162	165	5%	5%	4%
Inventories	409	404	12%	11%	28%
Total current assets	1,297	1,145	37%	32%	36%
Fixed Assets					
Gross property and equipment	\$2,503	\$2,606	72%	73%	73%
Accumulated Depreciation	(314)	(161)	-9%	-4%	-9%
Net plant and equipment	2,189	2,445	63%	68%	64%
Total assets	\$3,486	\$3,590	100%	100%	100%
LIABILITIES AND EQUITY					
Current liabilities					
Accounts payable, other accrued liab.	\$ 300	\$ 315	9%	9%	15%
Notes payable	198	202	6%	6%	3%
Total current liabilities	498	517	14%	14%	18%
Long term debt	\$ 496	\$ 501	14%	14%	10%
Total liabilities	\$ 994	\$1,018	29%	28%	28%
Owners Equity					
Common stock and paid-in surplus	\$ 354	\$ 546	10%	15%	25%
Retained earnings	2,138	2,026	61%	56%	47%
Total Equity	\$2,492	\$2,572	71%	72%	72%
Total liabilities and equity	\$3,486	\$3,590	100%	100%	100%

Liquidity:

Credit:

Fixed assets and growth:

Long-term debt and equity financing:



EXAMPLE: Looking to the income statement, comment on the profit margins and costs. How do these values compare to the industry?

CONSOLIDATED STATEMENTS OF INCOME			
(in millions)			
	2023	2023	Industry 2023
Net sales	\$ 2,125	100%	100%
Cost of goods sold	1,201	57%	49%
Gross Profit	924	43%	51%
SG&A	102	5%	10%
Depreciation	153	7%	10%
Earnings before interest and taxes	669	31%	31%
Interest expense	125	6%	3%
Earnings before taxes	544	26%	28%
Tax Expense	114	5%	8%
Net Income	\$ 430	20%	20%



Recall **profit margins** are the percentage of revenue that remains as profit after expenses are deducted.

Gross profit margin = Gross Profit ÷ Revenue

Operating profit margin = EBIT ÷ Revenue

Net profit margin = Net Income ÷ Revenue

Unless otherwise specified, the **profit margin** usually refers to the **net profit margin**.

Profit Margins (Gross, Operating, and Net):

Costs:

We can think of this firm as having an accounting profit of \$0.20 for every dollar of sales (the net income is 20% of the sales by the common size income statement in 2023.) While understanding these comparisons is important, note how in some ways the firm may be “better” than the industry, and in other ways “worse” than the industry. Common size statements are just a small part of analyzing a firm.

Ratio Analysis

Ratio analysis is the evaluation of various financial metrics in relation to one another. Hundreds of ratios (with varying degrees of usefulness) can be computed, so we’ll focus on the more relevant ones here. Just like with common size statements, we might use ratios to compare a firm to itself overtime, but more likely to compare the firm to its peers and its industry. We’ll look at 5 categories:

- Short-Term Solvency and Liquidity
- Leverage and Long-Term Solvency
- Turnover
- Market Value
- Profitability



Ratio computations are simple. It is the interpretation that matters! Understand what the ratios tell us about the firm. Observe how ratios vary from one period to the next or relative to the firm's peers.

Table 1: Short-Term Solvency and Liquidity Ratios

Ratio	Formula
Current Ratio	$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick Ratio (Acid Test)	$\text{Quick Ratio (Acid Test)} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$

Short-term solvency and liquidity ratios measure the ability of the firm to meet its short-term borrowing obligations. While inventory is a current asset, it may take some time to sell, leading some investors to prefer to use the acid test to assess short term liquidity, particularly for firms with large inventories.



A firm has a current ratio of 1.3 and a quick ratio of 0.8. What does this mean?

Table 2: Leverage and Long-Term Solvency

Ratio	Formula
Total Debt	$\text{Total Debt} = \frac{\text{Total Assets} - \text{Total Equity}}{\text{Total Assets}}$
Debt to Equity (D/E)	$\text{Debt to Equity} = \frac{\text{Debt}}{\text{Equity}}$
Equity Multiplier	$\text{Equity Multiplier} = \frac{\text{Total Assets}}{\text{Total Equity}}$
Cash Coverage	$\text{Cash Coverage} = \frac{\text{EBIT} + \text{Depreciation}}{\text{Interest Expense}}$

Leverage and Long-Term Solvency ratios reveal the firm's ability to meet its longer-term borrowing obligations. Notice that here, "debt" refers to all liabilities.³



Interpret a total debt ratio of 0.31, a D/E ratio of 0.44, an equity multiplier of 1.44, and a cash coverage ratio of 6.28.



While too much leverage can be problematic for a firm, some amount of leverage can be a good thing. Borrowing allows firms to take on investment opportunities that they might not otherwise be able to afford, though at increased risk. Additionally, there are tax advantages to debt.

Table 3: Turnover

Ratio	Formula
Inventory Turnover	$\text{Inventory Turnover} = \frac{\text{COGS}}{\text{Inventory}}$
Total Asset Turnover	$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$

Turnover (or **TO**) ratios tell us about asset utilization and efficiency. How quickly is the firm selling through its inventory? How is it able to generate sales from its assets?



A firm has an inventor turnover ratio of 2.97 and a total asset turnover of 0.60. Last year, the firm's inventory turnover and total asset turnover were 1.8 and 0.5, respectively. What does this tell us?

Table 4: Market Value⁴

Ratio	Formula
Earnings per Share (EPS)	$EPS = \frac{\text{Net Income}}{\text{Shares Outstanding}}$
Price to Earnings Ratio (PE or P/E)	$PE = \frac{\text{Price per Share}}{EPS}$

Market value ratios provide measures of *relative value* of a share for publicly traded firms.



Two similar software firms have an EPS of \$10 and \$100, with P/E ratios of 2 and 5, respectively. On the basis of these ratios, which appears to be a “better deal” for an investor?

Table 5: Profitability

Ratio	Formula
Profit Margin (Gross, Operating, Net)	$GPM = \frac{Revenue - COGS}{Revenue}$ $OPM = \frac{EBIT}{Revenue}$ $PM = \frac{Net\ Income}{Revenue}$
Return on Assets (ROA)	$ROA = \frac{Net\ Income}{Assets}$
Return on Equity (ROE)	$ROE = \frac{Net\ Income}{Equity}$

Profitability ratios signal the income generating ability of the firm relative to revenues, assets, or equity.



Interpret a firm's ROA of 0.12 and ROE of 0.17.

DUPONT ANALYSIS

The **Dupont Identity** lets us decompose a firm's ROE into its component parts. Doing this allows us to separately examine how operating efficiency (profitability), asset use efficiency, and financial leverage drive return to equity holders. A high ROE, however, can mask high levels of debt.

$$ROE = \frac{Net\ Income}{Sales} \times \frac{Sales}{Assets} \times \frac{Assets}{Equity} = \frac{Net\ Income}{Equity} = ROE$$

Or,

$$ROE = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}} = \frac{\text{Net Income}}{\text{Equity}} = ROE$$

Alternatively,

$$ROE = \text{Profit Margin} \times \text{Total Asset Turnover} \times \text{Equity Multiplier}$$

For the balance sheet and income statement examples above:

$$ROE = \frac{430}{2,125} \times \frac{2,125}{3,486} \times \frac{3,486}{2,492} = \frac{430}{2,492} = 17.26\%$$

$$ROE = 20.2\% \times 0.61 \times 1.40 = 17.26\%$$

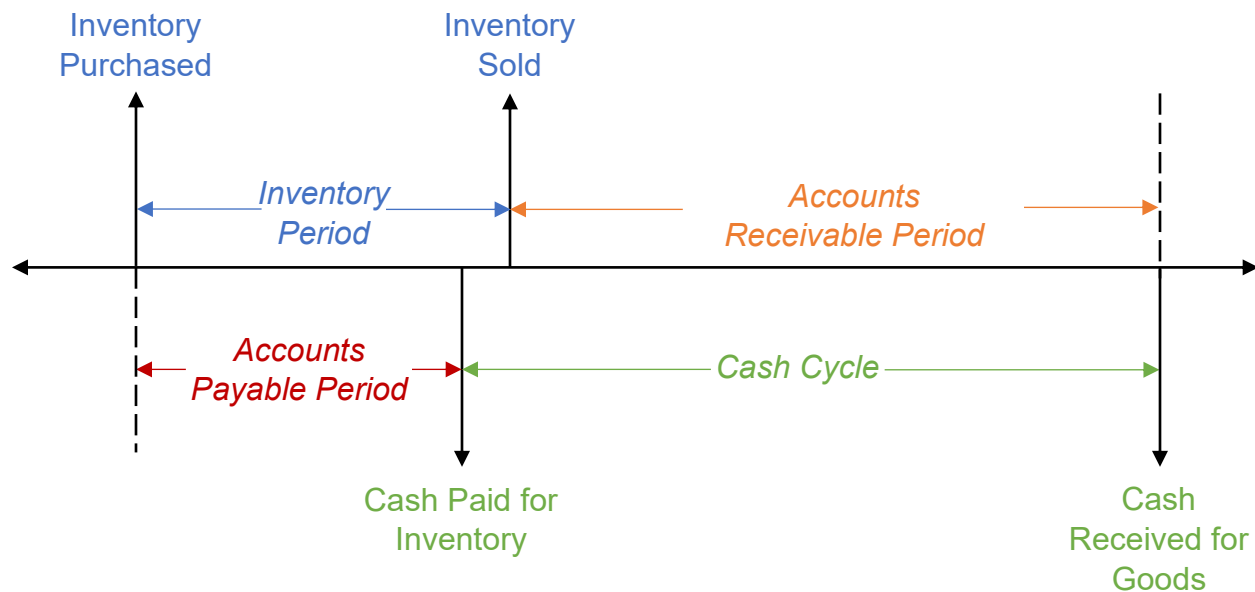


How do we interpret high and low values of each of the Dupont components? Do we generally wish to see high or low values of each? Suppose two firms have similar profit margins and total asset turnover, but one has a substantially higher equity multiplier. What might this imply?

THE OPERATING CYCLE AND CASH CONVERSION

In short-term finance, there are a number of events and activities financial managers are concerned with in the **operating cycle**, the period between the acquisition of inventory and the collection of cash from receivables after selling products. For a typical firm, this may look like this:

Figure 2: The Operating Cycle



The firm pays for inventory on account, beginning the accounts payable period and the inventory period, then pays the supplier in cash, ending the accounts payable period and beginning the **cash cycle**. Although the inventory is sold to a customer, it is done so on credit, with the cash cycle (and accounts receivable period) ending only once the cash is received.

The **cash conversion cycle** is therefore:

$$CCC = \underbrace{(\text{Days in Inventory} + \text{Days in Accts Receivable})}_{\text{Operating Cycle}} - \text{Days in Accts Payable}$$

However, we will need to deduce the number of days for each of these components using ratios:

$$\text{Days in Inventory} = \frac{365 \text{ Days}}{\text{COGS/Average Inventory}}$$

$$\text{Days in Accts Receivable} = \frac{365 \text{ Days}}{\text{Credit Sales/Average Accts Receivable}}$$

$$\text{Days in Accts Payable} = \frac{365 \text{ Days}}{\text{COGS/Average Accts Payable}}$$

Note that the *average* for inventory, accounts receivable, and accounts payable is the average between the beginning and ending balances for each (i.e., the average of last year's and this year's inventory, A/R, and A/P as listed on the balance sheet).



EXAMPLE: For the financial statements presented above, assuming 100% of sales on credit:

$$CCC = \left(\frac{365 \text{ Days}}{\text{COGS/Average Inventory}} + \frac{365 \text{ Days}}{\text{Credit Sales/Average Accts Receivable}} \right) - \frac{365 \text{ Days}}{\text{COGS/Average Accts Payable}}$$

$$CCC = \left(\frac{365}{1201/407} + \frac{365}{2125/164} \right) - \frac{365}{1201/308} = 58.17$$

INTERPRETATION: On average, there are 58.17 days between the time the firm pays cash for inventory to the time the firm collects cash from customers for that sold inventory. Ideally, this number should be low. It implies the firm is managing inventory efficiently and converting its sales from account to cash quickly.

IN SUMMARY



We have covered several useful ratios for financial analysis. Use the Excel file *Statement of Cash Flow and Ratios* available at josephfarizo.com/fin360.html for randomized practice problems. Be sure to understand the interpretation of each ratio.

While ratios are useful in assessing firms, they are not perfect. Comparing to competitors and the industry can be challenging, particularly for **conglomerates** that operate in many industries (i.e., Apple and Netflix both offer streaming services, should they be compared?)

Some ratios are more relevant for certain industries than others (i.e., inventory turnover matters more for heavy manufacturing firms than service firms.) Different inventory valuation techniques or depreciation schedules may also make the comparison between firms difficult.

Ratios should be computed consistently and frequently for a firm, its competitors, and its industry, and tracked overtime. Understanding how the ratios are interpreted, and what might be considered a “healthy” ratio, is crucial.



Even within a firm, some ratios may appear healthy while other similar ratios for that same firm appear unhealthy. Ratios are part of the many tools a financial analyst can use. There is never a firm that will appear perfectly healthy (or unhealthy) in all measures. There will always be room for interpretation, and different analysts can and do reach different conclusions.

CRITICAL THINKING & CONCEPTUAL QUESTIONS

1. Explain the intuition behind why each of the following represent a source of cash:
 - a. Decrease in A/R, inventory, and fixed assets
 - b. Increase in A/P, current liabilities, common stock
2. Explain the intuition behind why each of the following represent a use of cash:
 - a. Increase in A/R, inventory, and fixed assets
 - b. Decrease in A/P, current liabilities, and common stock
3. Indicate whether each of the following would be found in the *operating*, *investing*, or *financing* section of a firm's statement of cash flow. Explain why each is found in its appropriate section.
 - a. Depreciation and amortization
 - b. Dividends
 - c. Change in Notes payable
 - d. Change in Accounts receivable
 - e. Change in Accounts payable
 - f. Change in Fixed assets
 - g. Change in Inventory
 - h. Change in Long term debt
 - i. Change in Common stock
4. How can we determine a firm's current year retained earnings given last year's balance sheet, and this year's income statement and dividends?
5. Explain what positive and negative values for operating, investing, and financing activities imply for a firm. Is a positive or negative value for each considered healthy?
6. How can we verify the accuracy of the statement of cash flow using a firm's balance sheet for the current year and previous year?
7. Describe the internal and external uses of financial statement analysis. Which is more often associated with "corporate finance" decisions? Which is more often associated with "investing"?
8. Explain how common size financial statements are useful in comparing the firm to (1) itself through time and (2) comparable companies.
9. Why would comparing company ratios for two firms in very different industries be problematic?
10. How are gross, operating, and net profit margins computed? What do each tell us?
11. Name the ratios you would use to characterize the short-term liquidity of the firm? What do higher and lower values of these ratios tell us?
12. What is the rationale for subtracting inventory from current assets in the quick ratio? How does this change the ratio's interpretation relative to the current ratio?
13. A firm's current ratio has rapidly risen, but its quick ratio has fallen. What does this imply?
14. Explain the benefits and costs of leverage. How might an investor or manager determine whether a firm's leverage is "too high" or "too low"?
15. What does a higher equity multiplier tell us about a firm's use of leverage?
16. What does the numerator of the cash coverage ratio try to tell us about the firm? How do you interpret the cash coverage ratio?

17. Explain why an investor would be willing to pay a higher stock price for a share of a company than that company's *earnings per share*?
18. All else equal, is a lower or higher P/E ratio preferable for an investor buying a stock? Why?
19. Explain the components of the Dupont analysis, and why "decomposing" ROE into components is important in the first place. Explain what higher and lower values for each component means.
20. All else equal, which component of ROE do you think is always better if higher?
21. Given your understanding of Dupont analysis, explain how a firm can manipulate and increase its ROE by its own choice of borrowing.
22. If the equity multiplier is "high," what other ratio(s) should be "low" in order to indicate that the firm has not taken on an unhealthy amount of leverage?
23. Why is the cash conversion cycle more relevant for manufacturing firms than service firms?
24. All else equal, is a longer or shorter cash conversion cycle generally preferable for a firm?
25. Explain why, all else equal, a firm would prefer a shorter A/R period but a longer A/P period.
26. Explain what a stock repurchase is and how it adds value for a shareholder of a firm. What happens to a company's *earnings per share* after a share repurchase? Why? Given this change to EPS following a repurchase, how should we be careful when we think about comparing firms on the basis of their EPS?
27. How would you compute the cash conversion cycle if less than 100% of sales are on credit?
28. Which one (or more) of the ratios that we have discussed would you use to address the following items:
 - a. The firm's ability to pay its near-term liabilities
 - b. The firm's liquidity
 - c. The firm's ability to cover its interest expense
 - d. The firm's efficiency in generating sales given the strength of its balance sheet
 - e. The frequency through which a firm sells through its inventory
 - f. The firm's common stock "value" relative to its accounting profitability

ANALYTICAL QUESTIONS

1. Below is a table from Professor Aswath Damodaran's website showing industry ROE ratios.⁵ Use it to answer the questions that follow.

<i>Industry Name</i>	<i>Number of firms</i>	<i>ROE (unadjusted)</i>
Advertising	57	3.25%
Aerospace/Defense	70	13.19%
Air Transport	25	21.94%
Apparel	38	9.20%
Auto & Truck	34	9.37%
Auto Parts	39	5.72%
Bank (Money Center)	15	14.87%
Banks (Regional)	625	12.14%
Beverage (Alcoholic)	19	8.70%
Beverage (Soft)	29	30.56%
Broadcasting	22	-2.16%
Brokerage & Investment Banking	27	10.41%
Building Materials	44	21.35%
Business & Consumer Services	162	14.00%
Cable TV	10	19.47%
Chemical (Basic)	32	8.89%
Chemical (Diversified)	4	-2.36%
Chemical (Specialty)	68	14.94%
Coal & Related Energy	18	29.07%
Computer Services	72	18.77%

- You are considering an investment in a soft drink company that has an ROE of 18.88% or an auto parts manufacturing company with an ROE of 9.8%. On the basis of ROE alone, which might be a better investment and why?
- What portion of the Dupont identity do you think explains the negative values for broadcasting and diversified chemicals?
- Why might you "trust" the average ROE in the table to more accurately reflect the "business and consumer services" industry than the "chemicals (diversified)" industry?
- Name an industry that you think might have a low total asset turnover. Why? What effect would this have on the industry's ROE?

NOTES & REFERENCES

¹ Stock buybacks: <https://www.wsj.com/articles/stock-buybacks-what-every-investor-needs-to-know-11607185864>

² See <https://www.osha.gov/data/sic-manual> for SIC code listings. You can view a firm's SIC code on EDGAR.

³ This is consistent with Ross, Westerfield, and Jordan *Fundamentals of Corporate Finance*. Other texts and sources will not consider short term liabilities in the computation.

⁴ Quarterly EPS announced in corporate earnings announcements is usually the net income for the quarter divided by the number of shares. PE ratios are typically trailing twelve months (TTM) and use the annual trailing 12-month EPS.

⁵ See https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/roe.html for the full results.

