Tennessee
TECH

Financial Statements: Overview

Financial Statement Overview

Annual Report (10K): a report issued annually by a corporation to its stockholders. It contains basic financial statements (balance sheet, income statement, statement of cash flows, statement of stockholders' equity) as well as management's analysis of the firm's past operations & future prospects

Quarterly (10Q) reports are also provided but are not as thorough.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2019
or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to
Commission file number 1-442

THE BOEING COMPANY
(Exact name of registrant as specified in its charter)

Delaware	**91-0425694**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
100 N. Riverside Plaza, Chicago, IL	**60606-1596**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code (312)-544-2000

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, $5.00 Par Value	BA	New York Stock Exchange
(Title of each class)	(Trading Symbol)	(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.Yes ☒ No ☐
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2019, there were 562,702,606 common shares outstanding held by nonaffiliates of the registrant, and the aggregate market value of the common shares (based upon the closing price of these shares on the New York Stock Exchange) was approximately $204.8 billion.

The number of shares of the registrant's common stock outstanding as of January 24, 2020 was 563,152,208.

DOCUMENTS INCORPORATED BY REFERENCE
Part III incorporates information by reference to the registrant's definitive proxy statement, to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2019.

Financial Statement Overview

❖ Importance:

The information contained in this report can be used to help forecast future earnings and dividends and is thus very important for creditors & investors

❖ Limitations:

- Window dressing
- Differences in accounting standards (GAAP v. IFRS)
- Fraud

Financial Statements:
The Balance Sheet

Balance Sheet

- shows a snapshot view of the company's financial position at a specific time

Assets	Liabilities and Equity
Current Assets: short-lived assets (less than 1 year)	**Current Liabilities**: short-term obligations of the firm (less than 1 year)
Fixed Assets: long-lived assets (more than one year)	**Long-term liabilities**: long-term obligations of the firm
	Equity: equity investment in the firm

Balance Sheet-Assets

- Current Assets include:
  - Cash
  - Inventory: Goods that have been produced but not yet sold
  - Accounts receivable: money owed by other parties to the firm for the sale of products on credit
- Fixed Assets:
  - Land and buildings
  - Equipment
  - Intangible assets: assets that are not physical like trademarks or copyrights. It also includes goodwill: a by-product of acquisitions.

Balance Sheet-Assets

- A note on fixed assets:
  - Fixed assets (gross fixed assets) are not adjusted for depreciation
  - Net fixed assets are adjusted for depreciation
    - Net fixed assets=Gross fixed assets-depreciation
  - Depreciation is a non-cash expense that reflects the cost of tangible assets depleted in the production process
  - Amortization is similar to depreciation but it applies to intangible assets

Balance Sheet-Liabilities & Equity

- Current liabilities include
  - **Accounts payable**: represents credit received from suppliers and other vendors to the firm
  - **Notes payable**: short-term interest-bearing loans (due in less than one year)
  - Other short-term liabilities including **accruals** (i.e. wages due to employees)
- Long-term liabilities include
  - Long-term debt (via bank loan or **bonds**)
  - **Leases**: when firms lease long-term assets instead of buying them.

Balance Sheet-Liabilities & Equity

- Equity includes
  - **Common Stock** (Paid-in capital): the original proceeds received by the firm
  - **Retained earnings**: earnings reduced by any dividends paid out.

Financial Statements:
The Income Statement

Income Statement

- *shows a firm's revenues, expenses, and profits during a reporting period usually one quarter or one year.*

Example

- Emery Mining Inc. recently reported $150,000 of sales, cost of goods of $60,000, $15,000 of operating expenses other than depreciation, and $10,200 of depreciation. The company had $16,500 of outstanding bonds that carry a 7.25% interest rate, and its federal-plus-state income tax rate is 25%. How much was the firm's net income?

Independent Practice

- Houston Pumps recently reported $185,000 of sales, $145,000 of operating costs other than depreciation, and $9,250 of depreciation. The company had $35,000 of outstanding bonds that carry a 5% interest rate, and its average corporate tax rate was 25%. Calculate net income for Houston Pumps.

Financial Statements:
The Statement of Cash Flows

Statement of Cash Flows

- shows how much cash the firm began the year with, how much it ended up with, and what it did to increase/decrease cash
- Why does it matter?
  - Even if profitable, a company may not survive if it lacks cash flow. Income statements reflect profit based on when revenue is earned, not when payment (cash) is received from customers.
  - Does the company generate enough cash to pay for its new investments or does it need external financing (new debt or new equity)?
  - Does the company generate enough cash to pay dividends or does it have to sell its assets or borrow?

Statement of Cash Flows

- 4 Sections
  - Operating Activities: reflects inflows/outflows of cash due to regular operations
  - Investing Activities: reflects inflows/outflows of cash due to investments in fixed assets (or marketable securities)
  - Financing Activities: reflects inflows/outflows in cash due to debt or equity changes
  - Summary: reflects cash on hand

Statement of Cash Flows Explained- Tracking the Cash

I. Operating Activities

Start with Net Income

- Add in non-cash expenses
  - Depreciation & amortization
- Add-in any operating activity that increases cash
  - decreases in inventory (inventory decreases when it is sold, generating $$$)
  - decreases in accounts receivable (AR decreases when customers pay you, generating $$$)
  - increases in accounts payable (like a loan from your suppliers, generates $$$)
  - increases in accruals (like a loan from your employees, generates $$$)
- Subtract any operating activity that decreases cash
  - increases in inventory (use $$$ to make inventory)
  - increases in accounts receivable (like lending money to customer, uses $$$)
  - decreases in accounts payable (pay suppliers, uses $$$)
  - decreases in accruals (pay wages, uses $$$)

Net Cash provided by operating activities

Statement of Cash Flows Explained-Tracking the Cash

II. Investing Activities

- Add-in any investing activity that increases cash
  - Sales of fixed assets, generates $$$
- Subtract any investing activity that decreases cash
  - Purchases of fixed assets, uses $$$

Net Cash provided by investing activities

Statement of Cash Flows Explained-Tracking the Cash

III. Financing Activities

- Add-in any financing activity that increases cash
  - New debt—bonds or notes payable—generates $$$
- Subtract any financing activity that decreases cash
  - Dividend payments, uses $$$
  - Repayment of debt, uses $$$

Net Cash provided by financing activities

Statement of Cash Flows Explained- Tracking the Cash

IV. Summary

Net change in cash (Net Cash from Sections I, II, and III)
+Cash at the beginning of the year
=Cash at the end of the year

Example

- **STATEMENT OF CASH FLOWS** You have just been hired as a financial analyst for Basel Industries...your first job will be to recreate the firm's cash flow statement for the year just ended. The firm had $100,000 in the bank at the end of the prior year and its working capital accounts except cash remained constant during the year. It earned $5 million in net income during the year but paid $750,000 in dividends to common shareholders. Throughout the year, the firm purchased $5.5 million of machinery that was needed for a new project. You have just spoken to the firm's accountants and annual depreciation expense for the year is $450,000; however, the purchase price for the machinery represents additions to property, plant, and equipment before depreciation. Finally, you have determined that the only financing done by the firm was to issue long-term debt of $1 million at a 6% interest rate. What was the firm's end-of-year cash balance?

Independent Practice

- Which of the following is consistent with cash inflow from operating activities? Select all that apply.

A. Accounts Payable Decrease

B. Sale of Equipment

C. Inventory Increases

D. Accounts Receivable Decrease

E. New Bond Issuance

Financial Statements:
The Statement of Stockholders' Equity

Statement of Stockholders' Equity

- a statement that shows by how much a firm's equity changed during the year and why this change occurred
- What should you remember?
  - Common Stockholders' Equity=Common Equity=Equity
  - The statement shows the following relationships:
    - Net Income-Dividends Paid=Retained Earnings
    - Paid-in capital + retained earnings=common equity

Financial Statements: Free Cash Flow

Free Cash Flow:

- Definition:
  - the amount of cash that could be withdrawn from a firm without harming its ability to operate and produce future cash flows (in other words, after it has made all investments necessary to sustain ongoing operations).
- Uses
  - Pay interest to debtholders
  - Repay debtholders
  - Pay dividends
  - Repurchase stock from shareholders
  - Buy short-term investments or other non-operating assets

Free Cash Flow Formula

$$Free\ Cash\ Flow = [EBIT(1-T) + depreciation\ \&\ amortization] - [capital\ expenditures + \Delta NOWC]$$

Free Cash Flow Example

FREE CASH FLOW Bailey Corporation's financial statements (dollars and shares are in millions) are provided here.

Balance Sheets as of December 31

	2023	2022
Assets		
Cash and equivalents	$ 14,000	$ 13,000
Accounts receivable	30,000	25,000
Inventories	28,125	21,000
Total current assets	$ 72,125	$ 59,000
Net plant and equipment	50,000	47,000
Total assets	$122,125	$106,000
Liabilities and Equity		
Accounts payable	$ 10,800	$ 9,000
Notes payable	6,700	5,150
Accruals	7,600	6,000
Total current liabilities	$ 25,100	$ 20,150
Long-term bonds	15,000	15,000
Total debt	$ 40,100	$ 35,150
Common stock (5,000 shares)	50,000	50,000
Retained earnings	32,025	20,850
Common equity	$ 82,025	$ 70,850
Total liabilities and equity	$122,125	$106,000

Income Statement for Year Ending December 31, 2023

Sales	$214,000
Operating costs excluding depreciation and amortization	170,000
EBITDA	$ 44,000
Depreciation & amortization	5,000
EBIT	$ 39,000
Interest	1,750
EBT	$ 37,250
Taxes (40%)	14,900
Net income	$ 22,350
Dividends paid	$ 11,175

Free Cash Flow Independent Practice

Calculate free cash flow in 2023.

FREE CASH FLOW Financial information for Powell Panther Corporation is shown here.

Powell Panther Corporation: Income Statements for Year Ending December 31 (Millions of Dollars)

	2023	2022
Sales	$1,200.0	$1,000.0
Operating costs excluding depreciation and amortization	1,020.0	850.0
EBITDA	$ 180.0	$ 150.0
Depreciation & amortization	30.0	25.0
Earnings before interest and taxes	$ 150.0	$ 125.0
Interest	21.7	20.2
Earnings before taxes	$ 128.3	$ 104.8
Taxes (40%)	51.3	41.9
Net income	$ 77.0	$ 62.9
Common dividends	$ 60.5	$ 46.4

Powell Panther Corporation: Balance Sheets as of December 31 (Millions of Dollars)

	2023	2022
Assets		
Cash and equivalents	$ 12.0	$ 10.0
Accounts receivable	180.0	150.0
Inventories	180.0	200.0
Total current assets	$372.0	$360.0
Net plant and equipment	300.0	250.0
Total assets	$672.0	$610.0
Liabilities and Equity		
Accounts payable	$108.0	$ 90.0
Notes payable	67.0	51.5
Accruals	72.0	60.0
Total current liabilities	$247.0	$201.5
Long-term bonds	150.0	150.0
Total debt	$397.0	$351.5
Common stock (50 million shares)	50.0	50.0
Retained earnings	225.0	208.5
Common equity	$275.0	$258.5
Total liabilities and equity	$672.0	$610.0

Additional Practice

1. Which financial statement shows a firm's revenues, expenses, and profits during a specific period of time?

2. Which of the following is (are) considered a fixed asset on the firm's balance sheet?

   Inventory Bonds Retained Earnings Copyrights Notes payable Equipment

3. Decreases in accounts receivable represent cash _______________ from _______________activities.

4. _______________is income not distributed to shareholders.

5. What are some uses of free cash flow?

6. The Berndt Corporation expects to have sales of $12 million. Costs other than depreciation are expected to be 75% of sales and depreciation is expected to be $1.5 million. The company has no debt and its state-plus-federal average tax rate is 25%. What is its expected net income?

Additional Practice

7. Given the following information, calculate RSO's free cash flow in 2023.

RSO Enterprises: Balance Sheet		
Assets	**2023**	**2022**
Cash	**10,800**	**12,000**
Accounts Receivable	**18,500**	**20,700**
Inventory	**20,500**	**22,400**
Other Current Assets	**4,500**	**4,200**
Total Current Assets	**54,300**	**59,300**
Net Property, Plant, and Equipment	**45,000**	**47,000**
Total Assets	**99,300**	**106,300**
Liabilities and Equity		
Accounts Payable	**8,500**	**9,200**
Notes Payable	**12,500**	**9,900**
Accruals	**10,800**	**11,600**
Total Current Liabilities	**31,800**	**30,700**
Long-term Bonds	**40,000**	**45,000**
Total Liabilities	**71,800**	**75,700**
Common Stock	**20,000**	**20,000**
Retained Earnings	**7,500**	**10,600**
Total Liabilities & Stockholders' Equity	**99,300**	**106,300**

RSO Enterprises Income Statement, for year ended 12/31/2023	
Sales Revenue	**90,000.00**
Cost of Goods Sold	**35,000.00**
Operating Expenses	**10,000.00**
Depreciation	**7,000.00**
Operating Income	**38,000.00**
Interest Expense	**5,000.00**
Earnings Before Taxes	**33,000.00**
Taxes (25%)	**8,250.00**
Net Income	**24,750.00**

Financial Statements: Financial Ratios

Ratio Analysis

- Ratio analysis involves calculating and interpreting financial ratios to assess a firm's performance and status.

- Useful for:

  Trend analysis (time series analysis): Examine the ratios over time to see whether conditions are improving or deteriorating

  Benchmarking: Compare company's ratios to the industry average or to a subset of main competitors

Types of Ratios

Type of Ratio	Definition
Liquidity	Measure a firm’s ability to satisfy its short-term obligations as they come due
Asset Management or Activity	Measure how effectively a firm is managing its assets
Debt or Solvency	Measure the extent to which a firm uses money from creditors rather than form stockholders to finance its operations and how effectively the firm manages its debt
Profitability	Measure the combined effects of liquidity, asset management, and debt on operating results
Market	Relate the firm’s market value (as measured by its current share price) to various accounting values—reflect what investors think about a firm and its prospects

Financial Statements: Liquidity Ratios

Liquidity Ratios

- Measure a firm's ability to satisfy its short-term obligations as they come due
  - Current Ratio
  - Quick (acid-test) ratio

Current Ratio

- Measures the firm's ability to meet its current liabilities using its current assets, implicitly assumes that all current assets are liquid
- Generally, the higher the better.
  - Current ratio below 1 indicates a firm has more obligations coming due than assets it can expect to turn to cash
  - Generally, a current ratio greater than 2 is desirable but there is a tradeoff between minimizing liquidity risk and tying up cash
  - A very high current ratio can be indicative of an unhealthy firm that is struggling to reduce its inventory.

$$\text{Current ratio} = \frac{Current\ Assets}{Current\ Liabilities}$$

Quick Ratio

- Distinguishes between current assets that can be quickly converted to cash versus those that cannot (inventory)

- Generally, the higher the better

$$quick\ ratio = \frac{current\ assets - inventory}{current\ liabilities}$$

Corrigan Corporation: Balance Sheets as of December 31

	2023	2022
Cash	$ 72,000	$ 65,000
Accounts receivable	439,000	328,000
Inventories	894,000	813,000
Total current assets	$1,405,000	$1,206,000
Land and building	238,000	271,000
Machinery	132,000	133,000
Other fixed assets	61,000	57,000
Total assets	$1,836,000	$1,667,000
Accounts and notes payable	$ 432,000	$ 409,500
Accrued liabilities	170,000	162,000
Total current liabilities	$ 602,000	$ 571,500
Long-term debt	404,290	258,898
Common stock	575,000	575,000
Retained earnings	254,710	261,602
Total liabilities and equity	$1,836,000	$1,667,000

Corrigan Corporation: Income Statements for Years Ending December 31

	2023	2022
Sales	$4,240,000	$3,635,000
Cost of goods sold	3,680,000	2,980,000
Gross operating profit	$ 560,000	$ 655,000
General administrative and selling expenses	236,320	213,550
Depreciation	159,000	154,500
Miscellaneous	134,000	127,000
Earnings before taxes (EBT)	$ 30,680	$ 159,950
Taxes (40%)	12,272	63,980
Net income	$ 18,408	$ 95,970

Per-Share Data

	2023	2022
EPS	$ 0.80	$ 4.17
Cash dividends	$ 1.10	$ 0.95
Market price (average)	$12.34	$23.57
P/E ratio	15.43×	5.65×
Number of shares outstanding	23,000	23,000

Independent Practice

❖ Calculate the liquidity ratios for 2023.

Interpretation

Liquidity	Corrigan 2022	Corrigan 2023	Industry
Current Ratio	2.11	2.33	2.7
Quick Ratio	0.69	0.85	

With respect to liquidity, Corrigan has the ability to cover its short-term liabilities at least twice using its current assets, as evidenced by a current ratio that is higher than 2. The firm appears to be improving in this category as the current ratio is rising over time, yet it is still below the industry average which could signal a problem with how the firm manages its cash position. This possibility is supported by the low quick ratio. A quick ratio lower than 1 suggests that when inventory is excluded from current assets, the firm does not have enough current assets to cover its short-term obligations. This can be a problem because inventory is the least liquid of the current assets. Thus the firm could run into a situation where even if profitable, it cannot continue operations.

Financial Statements:
Asset Management Ratios

Asset Management Ratios

- ❖ Measure how effectively a firm is managing its assets
  - – Inventory Turnover
  - – Days Sales Outstanding
  - – Fixed Asset Turnover
  - – Total Asset Turnover

Inventory Turnover

Measures capture how quickly a firm turns over its inventory

- Generally, the higher the better
- Caveat: too high turnover could indicate the company does not carry adequate inventory, leading to shortages, and possible losses in revenue

$$Inventory\ Turnover = \frac{Cost\ of\ Goods\ Sold}{Inventory}$$

Days Sales Outstanding

- Reflect how quickly a company collects cash from its credit sales

- Generally, the lower the better

- Caveat: if DSO is too small, it could signal credit terms that are too stringent which can lead to loss of revenues; it may also signal too many incentives for credit purchases which could also be problematic if it artificially inflates revenues

$$DSO=\frac{Accounts\ Receivable}{Average\ daily\ sales}$$

Where average daily sales$=\frac{Annual\ SalesRevenue}{365}$

Fixed Asset Turnover

- Measures how efficiently a company generates sales from its investments in fixed assets
- Generally, the higher the better. A low ratio can indicate inefficiency, a business that is capital intensive or a business that may be new and not operating at full capacity.

$$Fixed\ Asset\ Turnover = \frac{Sales\ Revenue}{Net\ Fixed\ Assets}$$

Total Asset Turnover

- Measures how efficiently a firm generates revenue from its investments in all assets.
- Generally, a higher value is better. However, this ratio also reflects corporate strategy—a company that chooses to use more labor and less capital (because labor is not captured by total assets) will have higher values.

$$Total\ Asset\ Turnover = \frac{Sales\ Revenue}{Total\ Assets}$$

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Number of shares outstanding	23,000	23,000

Independent Practice

- Calculate the asset management ratios for 2023.

Interpretation

Asset Management/ Activity	Corrigan 2022	Corrigan 2023	Industry
Inventory Turnover	3.67	4.12	7.0
Days Sales Outstanding (DSO)	33 days	38 days	32 days
Fixed Asset Turnover	11.86	15.59	13
Total Asset Turnover	2.18	2.31	2.6

Corrigan's position is mixed. On one hand, its inventory turnover is increasing over time, which is a good sign but it is significantly below the industry average. That begs the question of why customers are not buying up Corrigan's inventory. Perhaps their product is viewed as inferior to a competitor's or customers have little brand loyalty. Similarly, the firm's total asset turnover is increasing over time from 2.18 to 2.31 suggesting that for every $1 the firm has in total assets, it can generate $2.31 in sales revenue. The increase is positive but the firm is trailing the industry which averages 2.6. In addition, the firm's average collection period is increasing from 33 days to 38 days. This means customers are taking longer to pay Corrigan. This likely contributes to their poor liquidity position. It appears that the billing terms are probably for payment in 30 days but customers are taking an extra week to pay on average.

On the other hand, the firm's fixed asset turnover suggests a favorable picture for Corrigan. The ratio is improving from 11.86 to 15.59 which means that for every $1 of net fixed assets the firm has, it can generate sales revenues of $15.59. In this case, the firm is not only improving but in the latest year, it is higher than the industry average. Perhaps the firm disposed of assets that were not very productive leading to the increase.

Financial Statements: Profitability Ratios

Profitability Ratios

- Measure the combined effects of liquidity, asset management, and debt on operating results
  - Net Profit Margin
  - Operating Profit Margin
  - Return on Total Assets (ROA)
  - Return on Common Equity (ROE)

Operating Margin

- Measures the amount of operating profit that a company generates for each dollar of sales, takes into account overhead and other administrative costs, but NOT financing costs
- Higher levels are more desirable

$$Operating\ Margin = \frac{EBIT}{Sales\ Revenue}$$

Net Profit Margin

- Measures the amount of income that a company was able to generate for each dollar of revenue
- Net income is generally adjusted to remove the effects of non-recurring items and provides a more accurate picture of sustainable earnings
- A higher level is more desirable

$$\text{Net } Profit\ Margin = \frac{Net\ Income}{SalesRevenue}$$

Return on Assets (ROA)

- Measures the return earned on a company on its assets. The higher the ratio, the more net income is generated by each dollar of assets.

- Can be problematic because Net Income accrues only to equity holders while Total Assets reflect claims by equity and bondholders.

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Profitability: Return on Equity (ROE)

- Measures the return earned on the common stockholders' investment in a firm

$$ROE = \frac{Net\ Income}{Common\ Equity}$$

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Market price (average)	$12.34	$23.57
P/E ratio	15.43×	5.65×
Number of shares outstanding	23,000	23,000

Independent Practice

- Calculate the profitability ratios for 2023.

Interpretation

Profitability	Corrigan 2022	Corrigan 2023	Industry
Net Profit Margin	2.64%	0.43%	3.5%
Return on Assets	5.78%	1%	9.1%
Return on Equity	11.47%	2.2%	18.2%

With respect to profitability, the picture for Corrigan is clear; it is not doing well. All profitability measures are falling over time and all are below the industry average. The profit margin indicates that for every $1 of sales the firm generates, less than half a cent of profit is generated, while the industry is averaging 3.5 cents. Similarly for every dollar of assets the firm holds, only 1 cent of profit is generated, much lower than the 9.1 cent industry average. The same pattern holds for ROE where every $1 of stockholders' equity is consistent with 2 cents of profit, unlike the 18.2 cents that the industry averages.

Financial Statements: Debt Ratios

Debt (Solvency) Ratios

- Measure the extent to which a firm uses money from creditors rather than form stockholders to finance its operations and how effectively the firm manages its debt
  - Debt Ratio
  - Times Interest Earned

Debt Ratios

- No clear interpretation for these. While increased leverage means increased risk, high debt ratios may be justifiable and even good for a high-growth profitable company.
  - **Debt to Assets**: measures the percentage of every dollar of assets that is financed by debt
  - $Debt\ to\ Asset\ Ratio = \frac{Debt}{Total\ Assets}$

Times Interest Earned (TIE)

- The higher the ratio, the better is a firm's capacity to make interest payments from earnings.
- As a rule, a ratio of 8-9 is considered strong and there's usually little concern unless this falls to 2-3 or less
- Recognize that EBIT is volatile and can be impacted significantly by an economic slowdown

$$\text{TIE Ratio} = \frac{EBIT}{interest\ expense}$$

Corrigan Corporation: Balance Sheets as of December 31

	2022	2021
Cash	$ 72,000	$ 65,000
Accounts receivable	439,000	328,000
Inventories	894,000	813,000
Total current assets	$1,405,000	$1,206,000
Land and building	238,000	271,000
Machinery	132,000	133,000
Other fixed assets	61,000	57,000
Total assets	$1,836,000	$1,667,000
Accounts and notes payable	$ 432,000	$ 409,500
Accrued liabilities	170,000	162,000
Total current liabilities	$ 602,000	$ 571,500
Long-term debt	404,290	258,898
Common stock	575,000	575,000
Retained earnings	254,710	261,602
Total liabilities and equity	$1,836,000	$1,667,000

Corrigan Corporation: Income Statements for Years Ending December 31

	2022	2021
Sales	$4,240,000	$3,635,000
Cost of goods sold	3,680,000	2,980,000
Gross operating profit	$ 560,000	$ 655,000
General administrative and selling expenses	236,320	213,550
Depreciation	159,000	154,500
Miscellaneous	134,000	127,000
Earnings before taxes (EBT)	$ 30,680	$ 159,950
Taxes (40%)	12,272	63,980
Net income	$ 18,408	$ 95,970

Per-Share Data

	2022	2021
EPS	$ 0.80	$ 4.17
Cash dividends	$ 1.10	$ 0.95
Market price (average)	$12.34	$23.57
P/E ratio	15.43×	5.65×
Number of shares outstanding	23,000	23,000

Independent Practice

- Calculate the debt ratios for 2023.

Interpretation

Debt	Corrigan 2022	Corrigan 2023	Industry
Debt Ratio	40%	45.55%	50%

Corrigan’s debt is rising over time from 40% in 2022 to 45.55%% in 2023 but it is still slightly below the industry average. If we had no further information, there would be clear indication of whether the increase in debt is a good or bad thing. If the firm is increasing debt to finance profitable projects, the use of debt could be a good thing. Alternatively, if the firm is borrowing simply to maintain its current operations, this could signal operating problems and significant problems maintaining the business in the longer term. However, since the profitability numbers are trending down, it appears the firm is struggling. Therefore, the increase in debt is not a good sign. In addition, the firm is riskier in 2023. The more firms (and individuals for that matter) borrow, the more likely they will struggle to repay their loans.

Financial Statements: Market Ratios

Market Value Ratios

- ❖ Relate a firm's stock price to its earnings, cash flow and book value per share
- ❖ Help to compare the values of the stock of different companies
  - – Price/Earnings (P/E) Ratio
  - – Market/Book Ratio

Price-to-Earnings (P/E)

- Tells how much an investor pays for every dollar of earnings

- In general: would like to find companies with rising P/E ratios because they usually translate into higher future prices. High P/E values typically indicate investors expect a lot of growth in the firm

- Caveats:
  - (1) when this ratio gets too high, it may be a signal that stock is overvalued and may be due for a decline
  - (2) Sometimes stocks with low P/E ratios still have quality earnings (perhaps due to recent, non-recurring bad news). In a case like this, it can be a good idea to buy the stock at a "discount" relative to where it normally trades

$$\frac{P}{E} = \frac{Price}{Earnings\ per\ share}$$

Market-to-Book

- ❖ Tells the market value of one share relative to its accounting value (book value)
- ❖ Typically, M/B ratios of less than 3 could signal firms that are undervalued.
  - – Caveat: low M/B ratios could also mean the firm is underperforming

$$Market/Book = \frac{Price}{Book\,Value\,per\,share}$$

$$book\,value\,per\,share = \frac{Common\,Equity}{Common\,Shares\,Outstanding}$$

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P/E ratio	15.43×	5.65×
Number of shares outstanding	23,000	23,000

Interpretation

Market	Corrigan 2022	Corrigan 2023	Industry
Price/Earnings (P/E ratio)	5.65x	15.43x	6.0x

There are several different interpretations to this ratio:
When a P/E ratio is rising and higher than the industry average, this is a sign that investors are willing to pay more for each $1 of accounting income the company generates. This typically arises when the growth prospects for a company are very high. However, when this ratio gets too high and there is nothing to signal sound growth prospects (as in this case), the stock is likely overvalued. Investors who currently own stock in Corrigan should consider selling the stock. Those who don’t own it could take the risk of shortselling to try and profit from a price decline.

Limitations of Ratios

- Hard to apply ratio analysis for firms with diversified operations
- Benchmarking against the average may not be an adequate goal
- Inflation can distort balance sheets
- Seasonal factors influence ratios
- Window dressing
- Differences in accounting (U.S. GAAP v. IFRS), choices in depreciation, inventory methods

Other Issues

- Ratios do not reveal everything about a company. Some other things to consider include:
  - Overdependence on key customers or key product
  - Percentage of revenues generated abroad—should worry about political risk and currency risk
  - What are the threats to the existing business environment?
  - Are there significant changes occurring in the legal? Regulatory? Political? Or Tax Environments?

Additional Practice

1. Which type of ratios capture a firm's ability to manage its debt?

2. When the quick ratio increases, it generally indicates a _________________ in the firm's ________________ position.

3. Improvements in firm performance are generally indicated by ______________ in the DSO, ___________ in the Fixed Asset Turnover, and ____________in the Inventory Turnover.

4. A decrease in ROA indicates a ______________ in the firm's ________________ position.

5. Two common ratios used to assess a firm's liquidity position are the ____________________ and the ________________________.

Additional Practice

6. Use the financial statement information to calculate Barry Computer Company's: current ratio, quick ratio, DSO, inventory turnover, total asset turnover, profit margin, ROA, ROE & debt/total assets.

Barry Computer Company:
Balance Sheet as of December 31, 2012 (in Thousands)

Cash	$ 77,500	Accounts payable	$129,000
Receivables	336,000	Notes payable	84,000
Inventories	241,500	Other current liabilities	117,000
Total current assets	$655,000	Total current liabilities	$330,000
		Long-term debt	256,500
Net fixed assets	292,500	Common equity	361,000
Total assets	$947,500	Total liabilities and equity	$947,500

Barry Computer Company: Income Statement for Year Ended December 31, 2012 (in Thousands)

Sales		$1,607,500
Cost of goods sold		
Materials	$ 717,000	
Labor	453,000	
Heat, light, and power	68,000	
Indirect labor	113,000	
Depreciation	41,500	1,392,500
Gross profit		$ 215,000
Selling expenses		115,000
General and administrative expenses		30,000
Earnings before interest and taxes (EBIT)		$ 70,000
Interest expense		24,500
Earnings before taxes (EBT)		$ 45,500
Federal and state income taxes (40%)		18,200
Net income		$ 27,300