Financial Reporting and Analysis

Annual Report (10-K)

Written

* ⑤ Management's Commentary

*** Financial statements

* ① Balance Sheet (financial positions)

* ② income statement (operating results)

③ Statement of cash flows

④ Statement of stakeholders' equity

- A financial manager's primary goal is to maximize the fundamental / intrinsic value of the firm's stock. This value is baset on the stream of cash flows the firm expected to generate in the future.
- How does an investor go about future cash flows, and how does a financial manager decide which actions are most likely to increase cash flow?

Answering these questions, we need to understand "financial statements" that publicly traded firms must provide to the public.

① Balance Sheet reports the firm's financial positions at a particular point in time. It consists of three elements ; Assets, Liabilities, and Shareholders' equity.

ⓐ Assets represents what the firm "owns" ; Resources that are expected to provide future economic benefits

ⓑ Liabilities show what the firm "owes"; obligations that are expected to require an outflow of economic resources.

ⓒ Shareholders' equity ($\approx$ net assets) represents the amount of financing the firm experiences through common and preferred shares.

* Assets = Liabilities + Shareholders' equity

② Income Statement reports the revenues and expenses of the firm over a period of time;

Net income = Revenues − Expenses.

※ gain/loss ≈ temporary , revenue/expense ≈ routine
(we will discuss presentation formats later :)

③ Cash flows statement (Statement of Cash Flows) reports a firm/company's cash receipts and cash payments over a period of time.

④ Statement of Shareholder's Equity reports the changes in value to shareholders' equity over a period of time, and the business activities that contribute to whether the value of shareholders' equity increases or decreases.

— — — — — — — — A bit more details — — — — — — — —

① Balance Sheet (Financial Position)

future economic benefits!

"Assets"

- Current Assets
  - *1. cash (or Equivalent)
  - 2. marketable securities
  - *3. account receivable (AR)
  - *4. inventory
  - 5. other current assets
- Non-Current Assets
  - 1. financial assets
  - *2. property, plant and equipment (PP&E)
  - 3. investment property
  - 4. intangible assets

(operating)

sacrifice of future economic benefits

(Financing)

Liabilities

- Current liabilities
  - *1. account payable (AP)
  - 2. note payable and current position of long-term debt.
  - 3. accrued liabilities
  - 4. unearned revenues
- Non-current liabilities
  - 1. Long-term financial liabilities
  - 2. deferred tax liabilities

Equity (= net assets)

1. contributed capital
2. retained earnings
3. accumulated other comprehensive (OCI)
4. (Treasury stock)

(Investing)

*BS
Classified (CA/NCA/CL/NCL) ⟷ Liquidity based

*Commercial Bank Balance Sheet ; what does it look like?

Assets	Liabilities
*(1) Loans - Real estate - Commercial - Individual - Agricultural	(1) Transaction accounts - Demand deposits - NOW and ATS - MMDA
(2) Investment Securities *(- Short-term - Long-term T-bill, municipal U.S. Treasury, MBS)	(2) Savings and Time deposits ("Time deposits below insurance limit" → Small CDs "Time deposits above insurance limit") → Jumbo CDs • tradable in secondary market • matured between 1 month and five years • usually 1 million in size
(3) Non-Interest Cash and Due from Banks - Vault Cash - CIPC	(3) other borrowings
(4) Other assets - OREO	**Equity (≈ Net assets)** (1) retained earnings (2) other equities

※ MBS = Mortgage-backed securities
CIPC = Cash items in process of collection
OREO = other Real estate owned
NOW = negotiable orders of withdrawal
ATS = automatic transfers from savings
MMDA = money market deposit accounts

② Income Statement (operating results)

Revenue
(Cost of Good Sold: COGS ≈ Cost of sales)

"Gross Profit"
(Selling, General and Administrative expenses: SG&A)
(Depreciation expenses)

"Operating profit ≈ EBIT"
(Interest expenses)
(Tax expenses)

Income from continuing operations
Discontinued operations

"Net Income ≈ Net earnings"

※ Simply stated, Net Income (NI) = Revenues − Expenses

* How to distinguish Depreciation, Amortization, and Depletion?

	Type of Asset?	Examples?
ⓐ Depreciation	fixed assets	Building, Machinery, etc
ⓑ Amortization	intangible assets	patents, copyright, Goodwill
ⓒ Depletion	natural resources	Tree, oil, mines

*** Ratio Analysis? Is it important?

Ratio can be used to project earnings and future cash flows, evaluate a firm's flexibility, assess management's performance, evaluate changes in the firm and industry over time, and Compare the firm with industry competitors. Sadly, ratios cannot be useful when viewed in isolation and require adjustments when different firms and industries use different accounting methods.

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ROA

Equity Turnover

$$ROE = \frac{NI}{Equity} = \underbrace{\frac{NI}{Sales}}_{①} \times \underbrace{\frac{Sales}{Assets}}_{②} \times \underbrace{\frac{Asset}{Equity}}_{③}$$

Return on Equity: (Shareholders expect to earn a return on their money)

Ratio Category?
- ① Net profit margin : Profitability
- ② Asset turnover : Activity
- ③ Financial leverage : Solvency

Financial Analysis Techniques
- Common-Size Analysis
- Graphical Analysis
- Regression Analysis
- Ratio Analysis
  - Profitability ratios measure the overall performance of the firm relative to revenues, assets, equity, and capital
  - Activity ratios (≈ operating efficiency ratios) measure how efficiently the firm is managing its assets.
  - Liquidity ratios determine the firm's ability to pay its short-term liabilities
  - Solvency ratios measure a firm's financial leverage and ability to meet its long-term obligations.
  - Valuation: P/E, P/B, P/S ...

※ Dupont System = ① x ② x ③ = Net Profit margin x Asset turnover x Financial leverage

Profitability!

① Net profit margin = $\frac{NI}{Sales}$

Gross Profit margin

$= \frac{\text{Gross Profit}}{\text{Sales}}$

Operating Profit margin

$= \frac{\text{Operating Profit}}{\text{Sales}} \approx \frac{EBIT}{Sales}$

Efficiency!

② (total) asset turnover = $\frac{\text{Sales}}{\text{average total assets}}$

Fixed Asset Turnover

$= \frac{\text{Sales}}{\text{Fixed Assets}}$

How effectively firms use their plants / equipment?

Receivables Turnover

$= \frac{\text{Sales}}{\text{Receivables}}$

How many times firms collect their account receivables?

⇓

days of sales outstanding (average collection period)

$= \frac{365}{\text{Receivable Turnover}}$

Inventory Turnover

$= \frac{\text{COGS}}{\text{Inventory}}$

How many times firms sell and replace their products/services?)

⇓

days of inventory on hand

$= \frac{365}{\text{inventory turnover}}$

Payable Turnover

$= \frac{\text{Purchases}}{\text{(trade) payables}}$

How many times firms pay off their account payables

⇓

# of days of Payables

$= \frac{365}{\text{Payable turnover}}$

Solvency! (Long-term obligations)

③ Financial Leverage (leverage ratio) = $\frac{\text{Assets}}{\text{Equity}}$

debt-to-equity = $\frac{\text{debt}}{\text{equity}}$

debt-to-capital

$= \frac{\text{debt}}{\text{capital}}$

debt-to-assets

$= \frac{\text{debt}}{\text{assets}}$

Balance Sheet	
Assets Current Assets	Liabilities
① Cash	Current liability
② marketable securities	⋮
③ Account receivables	Non-current liabilities
④ Inventory	Equity
⑤ others	⋮
Non-current Assets	
⋮	

④ Liquidity Ratios (Short-term obligations)

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{CA}{CL}$$

$$\text{Quick ratio} = \frac{\text{cash} + \text{marketable securities} + \text{receivables}}{\text{Current liabilities}}$$

$$\text{Cash ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}$$

※ Cash conversion cycle is the length of time it takes to turn the firm's cash investment in inventory back into cash, in the form of collections from the sales of that inventory.

$$\text{Cash Conversion Cycle} = \left(\text{days sales outstanding}\right) + \left(\text{days of inventory on hand}\right) - \left(\#\text{ of days of Payables}\right)$$

if it is high, the firm has an excess amount of capital investment in the sales process :)

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* $\text{ROA} = \frac{NI}{\text{Assets}}$

* $\text{Equity Turnover} = \frac{\text{Sales}}{\text{Equity}}$

* $\text{ROE} = \frac{NI}{\text{Equity}} = \frac{NI}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$

= Net profit margin x Asset turnover x financial leverage

extend this formula...

* $\text{ROE} = \frac{NI}{\text{Equity}} = \underbrace{\left(\frac{NI}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{\text{Sales}}\right)}_{[ⓐ \times ⓑ \times ⓒ] = \text{Net profit Margin}} \times \underbrace{\frac{\text{Sales}}{\text{Assets}}}_{\text{Asset turnover}} \times \underbrace{\frac{\text{Assets}}{\text{Equity}}}_{\text{financial leverage}}$

ⓐ tax burden = $\frac{NI}{EBT} = (1 - \text{tax rate})$

ⓑ interest burden = $\frac{EBT}{EBIT}$

ⓒ EBIT margin = $\frac{EBIT}{\text{Sales}}$

↑ROE is always desirable??? Why?......