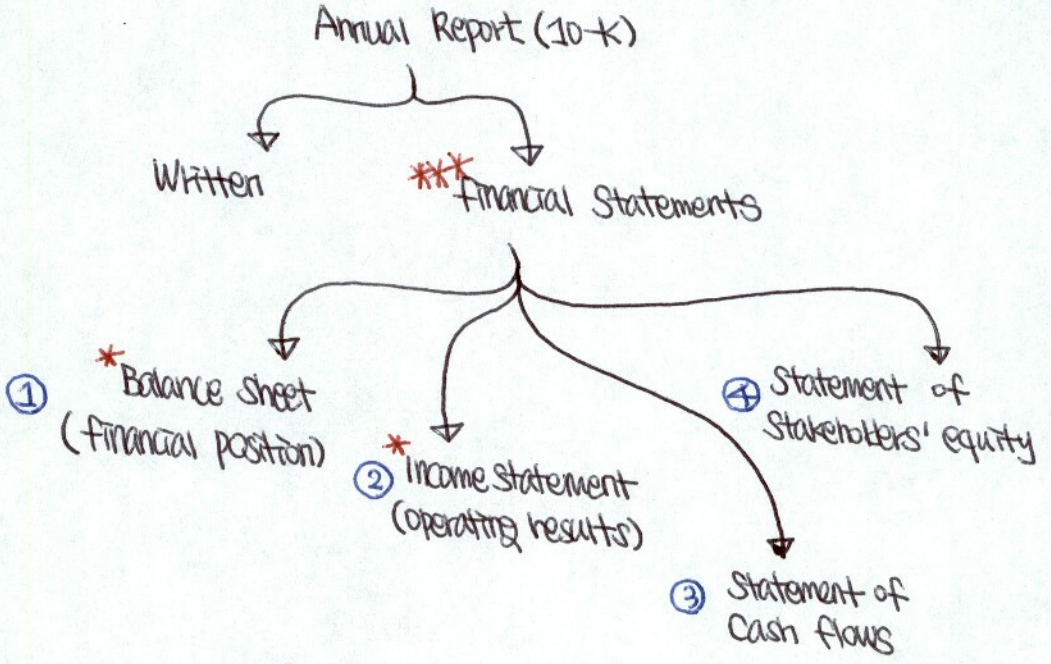
June 10, 2019

The Principles of Financial Management - Shin, Seungho

Part I



- A financial manager's * primary goal is to maximize shareholders' wealth. In other words, the primary goal is to maximize the fundamental, or intrinsic, value of the firm's stock. This value is based on the stream of cash flows the firm is expected to generate in the future.
  ① financial decision-making requires * free cash flow (FCF)
  ② FCF is total cash flow available for future investment and payment of a rate of return to capital givers/providers

- * 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

Let's take a look ① ~ ④ one by one :)

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① *** Balance sheet is a statement of the assets, liabilities, and capital of a firm/organization at a particular point in time; it provides a snapshot of its financial position/view.

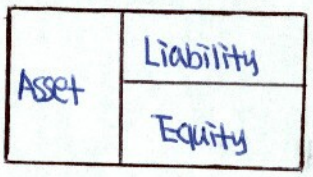
* Total assets (TA) = Total Liabilities (TL) + Shareholders' Equity (TE)

ⓐ assets represent the uses of a firm's funds; assets show what the firm "owns"

ⓑ liabilities represent the sources of a firm's funding; liabilities show what the firm "owes"

ⓒ shareholders' equity represents the amount of financing the firm experiences through common and preferred shares.

" Balance Sheet " (financial position) →



* Assets

- Current assets (working capital): cash, account receivable (AR), marketable securities (MS), inventory, others
- Non-current assets: financial assets, investment property, property, plant, equipment (PPE), intangible assets, goodwill

* Liabilities

- Current: account payable, note payable, accrued liability, unearned revenue
- Non-current: long-term financial liability, deffered tax liability

* Equity (≈ net asset)

- contributed capital
- retained earnings
- accumulated other comprehensive income
- (treasury stock)

* Classified balance sheet: current vs. non-current (most)

liquidity-based format: most → least liquidity (banking industry)

v Method of Reduction ; Depreciation, Amortization, and depletion.* How to distinguish them?

		Type of Asset?	Examples?
ⓐ	Depreciation ;	Fixed asset	Building, Machinery, etc
ⓑ	Amortization ;	Intangible asset	Copyright, Patent(s)...
ⓒ	Depletion ;	Mineral/Natural	Tree, oil, mines...

② Income statement (operating results) is a financial statement listing the revenues, expenses, and (net) income of a firm/organization in a period of time.

v *** Income Statement (operating results)

Sales Revenue
(Cost of good sold; COGS ≈ Cost of Sales)

"gross profit"
(Selling, General, and Administrative expenses)
(Depreciation Expenses)

"Operating profit (EBIT)"
(interest expenses)
(tax expenses)

Income from continuing operations
discontinued operations (barely existing)

"net income (≈ net earnings)"

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* ✓ financial managers are concerned about maximizing shareholders' wealth/value, which is oriented toward estimating and generating "cash flows".

✓ cash flows and (net) profits from an income statement are usually different.* why?

ⓐ Because the income statement is interested in measuring profit in a specific time period and certain assumptions vary profit measurement from cash flow measurement.

(non-cash expenses are components to measure profit(s), but need to add back to (or subtract from) to profit(s) to estimate cash flows)

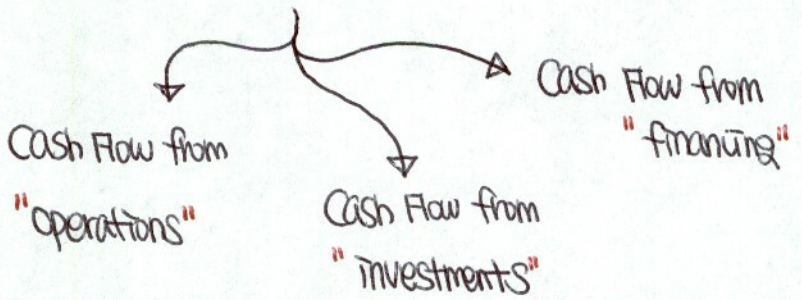
ⓑ Because different accounting method; * Cash vs. Accrual.

Difference? main difference lies in the timing of when sales and purchases are recorded in accounts

- Cash accounting recognizes revenues/expenses only when cash/money changes hands
- Accrual accounting recognizes revenues when a firm earned, and expenses when a firm billed, but not paid.

* ③ Statement of Cash Flows is a financial statement that presents a firm/organization's cash receipts and cash payments over a period of time.

✓ * Statement of Cash Flows



④ Statement of Shareholders' Equity is a financial statement that highlights the changes in value to shareholders' equity from the beginning of a given accounting period to the end of that period, and the business activities that contribute to whether the value of shareholders' equity increases or decreases.

Part II

***

• How to calculate Free Cash Flow? Negative FCF is bad? Why?

* $FCF = [EBIT(1-Tax) + Depreciation\ and\ Amortization] - [Capital\ expenditure + \Delta Net\ operating\ working\ capital]$

EBIT(1-Tax): Income statement

Depreciation and Amortization: Income Statement

Capital expenditure: (Statement of Cash Flows)or (Balance sheet) under the investment activities

ΔNet operating working capital: Balance Sheet

Changes in net fixed assets on the balance sheet between years and then add back depreciations/amortization for the current year.

* • Financial (accounting) statements are not sufficient for evaluating financial managers' performance because they do not reflect (current) market values. How to measure performance?

* Performance Measurement

Market Value Added (MVA):
it shows the difference between the market value of a firm's equity and the book value.
(applicable to entire firm)

Economic Value Added (EVA):
it shows/estimates a firm's economic profit.
(applicable to entire firm and divisional level(s) as well)

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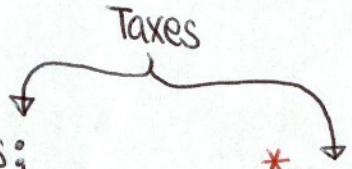
Part III

- Taxes usually have a major affect on financial decisions. In other words, taxes paid to state/governments affect cash flows available for shareholders.



Personal taxes;

Please talk to your CPA or EA :P, but...
Dividend and interest income is taxed as Ordinary Income

* Corporate taxes; every corporation is taxed on its taxable revenue adjusted for tax deductible business expenses, such as interest and COGS.

***

- Marginal tax rate vs. Average tax rate
  1. Marginal tax rate represents the added taxes/$ owed for each additional $ of taxable income. This rate is closely related to financial analysis/decision.
  2. Average tax rate describes the total tax owed divided by income before taxes. This rate is historical, but not for financial analysis/decision.

- Tax avoidance vs. Tax evasion
  1. Tax avoidance is legal and involves tax reduction purposes/strategies.
  2. Tax evasion is illegal activity, but in many situations, it is tolerated from a moral point of view.

Part IV

- Ratio analysis

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* Return on equity (ROE) $= \frac{NI}{Equity} = \left(\frac{NI}{Sales}\right)^{(IS)} \times \left(\frac{Sales}{Asset}\right)^{(BS)} \times \left(\frac{Asset}{Equity}\right)^{(BS)}$ ← Equity Turnover

(Shareholders expect to earn a return on their money)

ROA = ① × ②

※ Dupont System = ① × ② × ③ = Net Profit Margin × Asset turnover × Financial leverage

① Net Profit Margin
- Gross Profit Margin = Gross Profit / Sales
- Operating Profit Margin = Operating Profit / Sales

② Asset Turnover
- Fixed Asset Turnover = Sales / Fixed Asset
- Inventory Turnover = COGS / Avg. Inventory
- Receivable Turnover = Sales / Avg. receivable
- Payable Turnover = Purchase / Avg. payable

(This ratio measures the value of a firm's sales ; it used as an indicator of efficiency)

③ Financial Leverage
- Debt to Equity Ratio = Debt / Equity
- Debt to Asset Ratio = Debt / Asset

(This ratio measures how much assets a firm holds relative to its equity)

- Liquidity Ratio

① Current Ratio = Current assets / current liabilities

② Quick Ratio = (Current assets − Inventory) / current liabilities

③ Cash Ratio = (Cash + Marketable Securities) / current liabilities

Financial Statements and Taxes

1. Alex Corporation's 2018 and 2017 balance sheets (in thousands of dollars) are shown.

Alex Corporation December 31 Balance Sheets (in thousands of dollars)	2018	2017
Assets		
Cash	$ 102,850	$ 89,725
Accounts receivable	103,365	85,527
Inventories	38,444	34,982
Total current assets	$ 244,659	$ 210,234
Net fixed assets	67,165	42,436
Total assets	$ 311,824	$ 252,670
Liabilities and equity		
Accounts payable	$ 30,761	$ 23,109
Accruals	30,477	22,656
Notes payable	16,717	14,217
Total current liabilities	$ 77,955	$ 59,982
Long-term debt	76,264	63,914
Total liabilities	$ 154,219	$ 123,896
Common stock	100,000	90,000
Retained earnings	57,605	38,774
Total common equity	$ 157,605	$ 128,774
Total liabilities and equity	$ 311,824	$ 252,670

1) Sales for 2018 were $445,150,000, and Cost of goods sold (COGS) was 14% of sales. There was no selling, general, and administrative expenses. Furthermore, depreciation and amortization were 12% of net fixed assets, interest was $345,000,000. The corporate tax rate was 44%. Given this information, construct the Alex Corporation's 2018 Income statement.

Alex Corporation Income Statement (in thousands of dollars)	2018
Sales	$445,150,000
Cost of Goods Sold	(62,321,000)
Gross Profit	382,829,000
Selling, General, and Administrative Expenses	∅
Depreciation and amortization	(8059.80)
EBIT	382,820,940.20
Interest expense	(345,000,000)
EBT	37,820,940.20
Taxes (44%)	(16,641,213.69)
Net Income	**21,179,726.51**

2) Calculate 2018 and 2017 net operating working capital (NOWC) and 2018 free cash flow (FCF)

• Current Assets Current Liabilities Note Payable

NOWC 2017 = 164,469 = 210,234 − (59,982 − 14,217)

NOWC 2018 = 183,411 = 244,659 − (77,955 − 16,717)

) ΔNOWC = 27,011.80

FCF 2018 = [382,820,940.20 · (1 − 0,44) + 8059.80] − [(67,165 − 42,436 + 8059.80) + 27,011.80

EBIT Tax Dep. and Amorti. Net fixed assets 2018 Net fixed assets 2017 Dep. and Amorti. ΔNOWC

FCF 2018 = 214,327,985.7

NOWC = Current Assets − (Current Liabilities − Note Payable)

Without Statements of Cash flows!

FCF = [EBIT(1 − Tax) + Depreciation & Amortization] − [Capital Expenditure + ΔNOWC]

2. Emma Corporation has taxable income of $18,300,000. Calculate its total tax liability.

Corporate Tax Rates	
9%	$0 - $80,000
22%	$80,001 - $175,000
30%	$175,001 - $500,000
35%	$500,001 - $10,000,000
48%	Over $10,000,000
Additional surtax:	
	5% on income between $100,000 and $335,000
	3% on income between $15,000,000 and $18,333,333

7,200 = 80,000 × 9%.

20,900 = (175,000 − 80,000) × 22%.

97,500 = (500,000 − 175,000) × 30%.

3,325,000 = (10,000,000 − 500,000) × 35%.

3,984,000 = (18,300,000 − 10,000,000) × 48%.

11,750 = (335,000 − 100,000) × 5%.

\+ 99,000 = (18,300,000 − 15,000,000) × 3%.

"7,545,350"