Introduction to finance in corporates

Introduction to finance and marketing for engineers

Week 1

Business types

There are 3 general types of business:

- Sole Proprietorship
- Partnership
- Corporations

Sole proprietorship

Sole Proprietorship: a business owned by a single person

Pros:

- Easy to establish
- Full control of business
- Single taxation

Cons:

- Unlimited liability
- Limited lifetime
- Difficult to transfer ownership

Corporation

Corporation: a group of people authorized to act as a single entity (legally a person) and recognized as such in law

Pros:

- Limited liability
- Unlimited lifetime
- Easy to transfer ownership

Cons:

- Hard to establish
- Little control over business
- Double taxation

Note: a corporation must be incorporated in some state, each state has a different cost for incorporation

Note: limited liability corporations (LLC) may be exempt from corporate tax from the state

Agency problem

Occurs when a person or organization (principal) hires another person to represent them (agent.) The agent may not fully represent the principal and act on a conflict of interest (misaligned objectives).

For example, your real estate agent may try to make you purchase an expensive house because they get a percentage of the sales price as commission.

The costs to the principal due to the conflict of interest is known as the Agency Cost.

Ex 1

ABC Corporation hires Bill the Banker to help negotiate the purchase of the XYZ Company.

Bill owns 10,000 shares in XYZ. Identify the principal and agent and what conflicts of interest might arise?

Sol 1

Principle: ABC Corporation

Agent: Bill

Since Bill owns XYZ, he would have an interest in making ABC pay the highest price possible for XYZ, which is not in the best interest of ABC owners.

Financial statements

There exists many financial statements; of the mix, there are 4 important ones:

- *Balance Sheet* (Statement of Financial Position)
- *Income Statement*
- *Cash flow Statement*
- *Statement of Changes in Equity*

Balance sheet

A summary of the financial position of a firm at a specific time, usually at the end of the financial fiscal year

There exists 3 main sections of a balance sheet:

- Assets
- Liabilities
- Stockholder's Equity

Assets(A) = Liabilities(L) + Equity(E)

Simplified Balance Sheet	
Assets	
Current Assets	50
Fixed Assets	200
Other Assets	30
Total Assets	280
Liabilities	
Current Liabilities	20
Long-Term Liabilities	100
Total Liabilities	120
Equity	
Common Stock	100
Retained Earnings	60
Total Equity	160

Assets

Assets: are resources that a business owns or controls in which future benefits are expected to flow to the entity

Current Assets: are liquid and usable in the short term, usually implies the assets can be converted to cash within 1 year ie. cash, account receivables, inventory

Liquidity refers to how easily can an asset be turned into cash WITHOUT LOOSING VALUE

Fixed Assets: are expected to carry their benefits to the long term ie. land, property plant, equipment, intellectual property

Other Assets: Trademarks, patents, prepaid expenses.

Note: assets are listed as purchase price less depreciation

Liabilities

Liabilities: obligation of the entity to transfer cash or other

resources to another party

Current Liabilities: are financial commitments due to be paid within the short term (1 year)

ie. accounts payable, short term debt

Long-term Debt: are obligations the firm expect to settle

more than 1 year from the reporting date

ie. long-term debt, deferred taxes

Net working capital

Net Working Capital (NWC): refers to the amount of liquid assets available after paying off short-term debts

$$NWC = current\ assets - current\ liabilities$$

A firm should have a positive Net Working Capital such that than their current assets is greater than their short term debt

$$current\ ratio = \frac{current\ assets}{current\ liabilities}$$

Equity

Equity: is the residual interest in the assets of the entity after deducting all liabilities (value of the business)

Includes share capital contributed by the shareholders along with any profits or surpluses retained in the entity.

This is what the owners take home in the event of liquidation

Common Stock: Equity raised through sale of stock.

Retained Earnings: The sum of earnings (net income) from the past.

* In balance sheet, within each group items are ordered from most liquid to least liquid.

Exercise 2

A business owned by a single individual is called a:

A. Corporation

B. Sole Proprietorship

C. General Partnership

D. Limited Partnership

E. Limited Liability Company

Exercise 3

A general partner:

A. Has less legal liability than a limited partner

B. Has more management responsibility than a limited partner

C. Faces double taxation where as a limited partner does not

D. Cannot lose more than the amount of his/her equity investment

E. Is the term applied only to corporations which invest in partnerships

Public and Private

Private Corporations: does not need to disclose financial information, shares held by selected individuals and firms

Generally, private corporations are funded by angel investors and venture capital firms

Public Corporations: must publish its financial information in a given time frame, shares traded publicly

A public corporation must offer its shares to the public via an initial public offering (IPO)

IPO

Initial Public Offering (IPO): first round of offering stocks to the public

IPOs generally are a way of a company raising money via offering stocks

IPO will be announced that a certain company will be offering its shares at a price x to raise y amount of money

Once a firm goes public, it is known to be trading at some x dollars on the market

*IPO raises the largest amount of money for the company

IPO

- Prior to IPO only small numbers of shareholders
- Only private shares that are sold during or after an IPO launch become public shares.
- If too many private shareholders release their stock, it could result in abnormal trading.
- If too few release their stock, the price of public shares could be affected in a short amount of time.
- Public companies have thousands of shareholders and are subject to strict rules and regulations. They must form a *board of directors* and they must report auditable financial and accounting information every quarter.

Exercise 4

Suppose you own 100 shares of IBM stocks which you intend to sell today.

Since you will sell it in the secondary market, IBM will receive no direct cash flow as a result of your sale.

Why the, should IBM's management care about the price you get for your shares?

Solution

The stock price indirectly affects the position of the corporation.

If stock price is low, market does not value the corporation.

Shareholders and management

Shareholders (principals) look to increase value of the company over time (long-term growth)

Management (agents) looks to secure their financial position (get paid)

The security of the management may drive them to take less risk even though the risk may spark growth

The objective of the managers should be to maximize growth (maximize stock price) at each point in time

To align, we connect the payout of the agent to his or her performance via:

- Stock options
- Restricted stocks

Exercise 5

Agency costs refers to:

A. The total dividends paid to stockholders over the lifetime of a firm

B. The costs that result from default and bankruptcy of a firm

C. Corporate income subjected to double taxation

D. The costs of any conflicts of interest between stockholders and management

E. The total interest paid to the creditors over the lifetime of a firm

Exercise 6

Which one of the following actions by a financial manager creates an agency problem?

A. Refusing to borrow money when doing so will create losses for the firm

B. Refusing to lower selling prices if doing so will reduce the net profits

C. Agreeing to expand the company at the expense of the stockholder's value

D. Agreeing to pay bonuses based on the book value of the company stock

E. Increasing current costs in order to increase the market value of the stockholder's equity

Exercise 7

Managers are encouraged to act in the shareholder's interests by:

A. Shareholder election of a board of directors who select management

B. The threat of a takeover from another firm

C. Compensation contracts that tie compensation to corporate success

D. Both A and B

. All of the above

Ex 8

Which one of the following assets is generally the most liquid?

A. Inventory

B. Buildings

C. Accounts Receivables

D. Equipment

E. Patents

Income statement

Income Statement: shows the revenues and expenses for a company over a time period (ie. quarterly)

Total Revenue (Operating Revenue): amount of money that was made by the company (top line)

Cost of Revenue (Cost of Goods Sold): the cost to produce our commodity

Gross Profit: the amount of profit taken prior to looking at non-production related expenses

Note: the following is an income statement from Twitter Inc. (TWTR)

Period Ending	Dec 31, 2013	Dec 31, 2012	Dec 31, 2011
Total Revenue	**664,890**	**316,933**	**106,313**
Cost of Revenue	266,718	128,768	61,803
Gross Profit	**398,172**	**188,165**	**44,510**
Operating Expenses			
Research Development	593,992	119,004	80,176
Selling General and Administrative	440,011	146,244	91,745
Non Recurring	-	-	-
Others	-	-	-
Total Operating Expenses	-	-	-
Operating Income or Loss	**(635,831)**	**(77,083)**	**(127,411)**
Income from Continuing Operations			
Total Other Income/Expenses Net	(4,455)	399	(1,530)
Earnings Before Interest And Taxes	(647,146)	(79,170)	(129,746)
Interest Expense	-	-	-
Income Before Tax	(647,146)	(79,170)	(129,746)
Income Tax Expense	(1,823)	229	(1,444)
Minority Interest	-	-	-
Net Income From Continuing Ops	(645,323)	(79,399)	(128,302)
Non-recurring Events			
Discontinued Operations	-	-	-
Extraordinary Items	-	-	-
Effect Of Accounting Changes	-	-	-
Other Items	-	-	-
Net Income	**(645,323)**	**(79,399)**	**(128,302)**
Preferred Stock And Other Adjustments	-	-	(35,816)
Net Income Applicable To Common Shares	**(645,323)**	**(79,399)**	**(164,118)**

Income statement

Operating Expense: day-to-day expenses

ie. R&D, administrative expense for sales

Depreciation: accounting for equipment (bought long ago) and their usage for producing the goods

Operating Income: revenue we made after accounting for day-to-day expenses

Income statement

Earnings Before Interest and Taxes (EBIT): amount of money that was made by the company before tax

Interest Expense: amount of money paid for interest from funding by debt

Note: EBIT only accounts for operating side and underestimates our cash flow due to depreciation

Income statement

Pre-tax Income: earnings before tax

Net Income (Bottom Line): the money we actually earned

Retained Earnings: money kept to fund business

Dividends: money distributed to shareholders