

Equity

IPO (Initially Public Offering)

1. Equity characteristics:
 - Permanent contribution of capital---ordinary shares
 - Ordinary shareholders have full voting rights.
 - Shareholders hold a residual claim:
 - Subordinated right to a return on capital
 - Subordinated right to a return of capital on liquidation
 - It is the most risky form of investment.
2. Setting the scene
Fund from family → Angel Investors → Venture Capitalists → Mezzanine Finance → IPO
3. Several major types of equity financing:
For unlisted companies, they can either be funded by venture capitalists (in stages) or can choose to list their companies (IPO/unseasoned offering);
With regard to listed companies (have issued shares to the public), there are typically three types of share issuing (seasoned offering), which are private placement, rights issue and dividend reinvestment plan.
4. Process of an IPO
 1. Engage an investment bank
 - Prospectus: a legal document detailing the IPO that is also used to market the float.
 - underwriter: guaranteed all issued shares will be sold, and is liable to purchase the unsold shares.
 2. The Roadshow
The bankers will hit the streets to market the float and attempt to gauge investor interest.
That is the place the book-building happened.
In this part, the subscription price is set.
 3. Set the price and list
The shares are issued in the
Primary Market --- the funds are received by the issuing firm.
The share begins trading in the stock exchange in the
Second Market --- the funds paid by buyers of shares don't go to the firms but to the share seller.
5. The advantages of going public (Why IPO):
 - a) Creating shares for future M&A ('my shares for your shares');
 - b) Establishing an objective market value (comparability);
 - c) Providing a secondary market for shares (liquidity);
 - d) Gaining reputation;
 - e) Enabling venture capitalists to cash out, etc.
6. The disadvantages of IPO
 - a) Huge floatation cost
 - b) The exposure to media
 - c) The dilution of control
 - d) The agency cost
7. Two major ways of listing:

- a. Fixed-price --- price is set by company, prospectus sent out and offers are received (Save agent cost)
- b. Book-building --- competitive bidding by institutional investors
 - Open pricing --- bids are taken from the market and the final price is that which clears the market.
 - Constrained open pricing --- an indicative range is provided and investors bids within that range are invited

8. Rationale for the typical under-pricing of IPOs:

- a) Winner's curse (make it fair for uninformed investors and ensure they can stay in the market)
 - Informed investors --- able to judge whether an IPO is over or underpriced
 - Uninformed investors --- not able to judge whether an IPO is over or underpriced
 - Mostly, the uninformed investors will lose with buying the IPO shares but the under pricing may reduce their loss.
- b) Market feedback (to induce institutional investors)
 - Under pricing can attract institutional investors.
- c) Bandwagon effect (people follow those few pioneer investors)
 - Investors are more likely to subscribe to a float that they perceive as popular with other investors.
- d) Investment banker monopsony power
 - Under pricing can reduce the investment banker's cost
 - Under pricing can be used to develop relationships with their potential clients
- e) Lawsuit avoidance (large initial returns = less lawsuits?)
 - Under pricing ensures that subscribers enjoy a gain from investment.
- f) Investment bankers are lazy and cunning;
 - In long term, the price of the shares will always increase.
- g) Dispersed ownership base (liquidity and control).
 - Under price will increase the demand that makes greater liquidity.

9. Underperformances of IPOs in the long run, why?

- a) Investors' sentiments change over time
 - Naturally, successful IPO subscribers are optimistic. However, over time, they adjust in the falling in share price that will not be confident.
- b) Windows of opportunity
 - IPO is a window of opportunity but there is only once IPO, hence, it may underperformance in the long run.
- c) Impresario hypothesis
 - Investment bankers may attempt to create the appearance of excess demand by IPO.

SEOs (Seasoned Equity Offering)

10. Private placement:

Advantages:

- Timeliness
- Low transaction costs

Disadvantages:

- Potential dilution in voting power, separate the ownership.
- Potential dilution in value.

Example

	Pre		Post	
Issued Shares	m	%	m	%
old share holders	10	100	10	90.9
new share holders	0	0	1	9.1

	Pre		Post	
value of equity	\$m		\$m	
old share holders	\$100		\$99.09	
new share holders	0		\$9.91	
	\$100		\$100+\$9	

11. Rights issue: pro-rata (1: N),

Rights issue is fixed price at discount

It is not as fast---need to take at least 23 days to complete

Not dilutive---the increase of the value is caused by the increase in the number of shares.

Calculation:

-N: 1: N rights issue gives the holder purchasing one share for every N shares they hold

-R: R is the value of the right

-X: X is the theoretical price of share ex-rights \leftarrow market share price after right issues

-M: M is the market price of the share cum-rights \leftarrow market share price before right issues

-S: S is the subscription price of new shares

The value of the right is $R = \frac{N(M-S)}{N+1}$

The value of the theoretical ex-rights price: $X = \frac{NM+S}{N+1}$

Renounceability

1. Exercise rights and acquire the new shares

More shares, have more voting right.

2. Sell the rights to a third party

More cash, voting rights decreased because of the decrease in the share value.

But the total value is constant.

3. Do nothing

Bad choice, lose the value of voting right.

AEO (Accelerated Entitlement Offers)

-Two stages

Stage one: Accelerated offer to institutional shareholders

Stage two: Offer to retail shareholders

-Three main types

1. Accelerated Non-renounceable Entitlement Offer (JUMBO)

2. Accelerated Renounceable Entitlement Offer (AREO)

3. Simultaneous Accelerated Renounceable Entitlement Offer (SAREO)

-Advantages:

The funds is raised quickly \leftarrow like a replacement

Allowing retail investors the chance to participate \leftarrow like a traditional rights issue

12. Dividend Reinvestment Plans

Use part or all of a dividend to apply for new shares. (Dividend is taxable)

DRP is just a very small right issue.

Example:

M: \$3, D: \$0.5, S: \$2 \rightarrow 1:4 \rightarrow N=4

Debt

1. Debt characteristics:

Usually no voting rights

Fixed and prior ranking contractual right to return on capital

Fixed and prior ranking contractual right to return of capital

Lower risk than equity

It has a holding life. E.g. 180 days BAB

Tax benefit: interest payment to debt holders is tax-free

2. Covenants:

Debt covenants are designed to protect interests of lenders

Positive:

- Maintain presence in certain markets

- Maintain assets

Negative (those methods can prevent wealth transfer from debt holders to shareholders)

- Limit access to further debt

- Restrict holding of certain investments

- Restrict dividends paid

3. Two general types of loans: direct or indirect.

Direct: commercial papers, corporate bonds, and other instruments.

Indirect: bank loans.

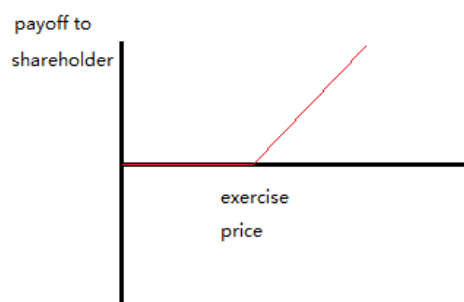
4. Risk

Financial risk: The possibility that a shareholder may lose money when he invests in a company with debt. The reason is the debt holder has the prior right to get the return.

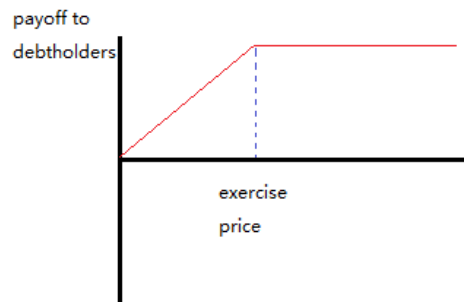
Business risk: Business risk is the possibility that a company will have lower than anticipated profits, or that it will experience a loss rather than a profit. Business risk always exists.

5. The **payoff structure** of equity and debt:

- a. Buying a **share** of a company is like having a **long** position of a **call option** (earn only after passing certain threshold).



- b. **Lending** money to a company is like having a short position of a put option and a **long** position of **risk-free** instrument (agree to accept whatever is left there).



Riskless debt --- whose payoff is equal to the face value of the debt

A short put option --- with an exercise price equal to the debt due

6. Leases:

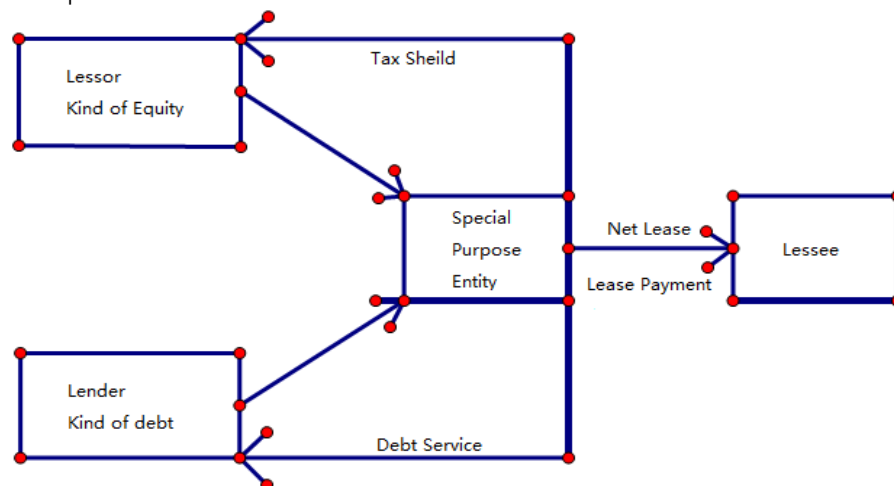
- Lessor: The **provider** of the leased asset, the legal owner of asset
- Lessee: The **user** of the leased asset.
- Lease: Contract where the lessor receives fixed payments from the lessee in return for the use of the asset.
- Vendor: The **seller** of the asset to the Lessor.

7. Finance lease and Operating lease.

Finance leases

Finance leases are essentially **borrowing to buy** and the lessee cannot break the deal without paying **large amount of penalty**

- Sale and leaseback agreements
The lessor sells it and immediately leases it back, using this asset as security.
- Cross-border leases
A lease between countries designed to take advantage of **accounting/ tax** differences.
- Leveraged leases
A leveraged lease is a lease in which the lessor puts up some of the money required to purchase the asset and borrows the rest from a lender.
Lessee pays to lessor. Lessor pays to lender. The lessor receives the **tax benefits** of ownership.



Operating leases

Operating leases are effectively **rental agreements** and the lessee **can call it off** at relatively low costs.

8. The fundamental difference of finance & operating lease:

Whether the risks and rewards associated with the ownership of the asset have all been transferred to the lessee.

Characteristic	Operating Lease	Finance Lease
Term of lease	Short	Life of asset
Cancellable	YES	Not without Penalty
Risk	Lessor	Lessee
Lessor	Provider of asset	Financial Institution
Lease	Rental agreement	Loan

9. Criteria for defining a financial lease:

- The lessee obtains the leased item or has option to purchase it** at the end of the lease agreement;
- The present value** of the lease payments has reached a certain amount;
- The term** of the lease agreement exceeds a certain percentage of the leased asset's useful life.

10. Lease or Purchase? (**Calculation!**)

- Like with any other economic decisions, we have to consider **opportunity costs**
- Cash flows involved (Lessee):
 - Asset price (+)
 - Lease payments (-)
 - Lease expense tax shield (+)
 - Depreciation expense tax shield (-)
 - Residual value (-)
 - Tax on gain/loss on residual value (+/-)
- The discount rate we use is the equivalent bank loan **after-tax** interest rate.
($i_{\text{lessor}} \neq i_{\text{lessee}}$)
- Using NPV analysis, we shall choose to lease if the NPV of the **incremental** cash flows resulting from leasing is positive
- Note that we implicitly assume that the lessee **didn't choose to obtain** the leased assets after the lease term, and that the cash flows involved are **for tax purpose**, **NOT** for accounting purpose.
- The attributes of the leased asset:
 - Easy to maintain and fix;
 - Not too special;
 - Easy to sell off (transaction cost)
 - The lessor has cheap accesses to the asset and can exploit huge tax benefits.
- Alleged advantages of leasing:
 - Conservation of capital (100% debt financing)
 - Off-balance sheet financing (hide the liability);
 - Tax benefits (the lessor with higher tax rates and willing to share);
 - Cost of capital (when $i_{\text{lessors}} < i_{\text{lessees}}$, the two NPV might be positive for both parties.)
 - Transaction costs in case of default (the lender faced is greater than the lessor faced)

11. An important Example:

There is a machinery costing \$78000 with an expected life of 4 years and with a residual value of \$20600. The machine is able to be leased over four years with annual payments of \$21300 payable in advance. The company tax rate is 34%. Straight line depreciation is used. The cost of borrowing is 15% p.a. (before tax). The required rate of return from the machine is 22% p.a. The lease payment is paid on the beginning of every year.

Lease payment tax shield

$$t_c * \text{Lease payment} = 0.34 * 21300 = +7242$$

Depreciation tax shield

$$t_c * \text{Depreciation} = 0.34 * \left(\frac{78000}{4}\right) = -6630$$

Tax on gain/ loss on sale

$$(\text{Residual value} - \text{Book value}) * t_c$$

$$\text{Book Value} = 78000 - 19500 * 4 = 0 \leftarrow \text{Book Value} = \text{Value} - \text{Depreciation p. a.} * \text{Using Years}$$

$$\text{Gain on sale} = 20600 - 0 = 20600$$

$$\text{Tax on Gain on sale} = 20600 * 0.34 = +7004$$

Description	Year 0	Year 1	Year 2	Year 3	Year 4
Cost	+78000				
Lease Payment	-21300	-21300	-21300	-21300	
Tax Shield	+7242	+7242	+7242	+7242	
Depreciation Tax Shield		-6630	-6630	-6630	-6630
Residual					-20600
Tax on Gain/Loss					+7004
Total	+63942	-20688	-20688	-20688	-20226

After-tax discount rate: $0.15 * (1 - 0.34) = 0.099$

$$\text{NPV} = 63942 - \frac{20688}{1.099} - \frac{20688}{1.099^2} - \frac{20688}{1.099^3} - \frac{20226}{1.099^4} = 63942 - 65403.68 = -\$1461.68$$

Due to the negative NPV, the lessee should reject the lease.

