CORPORATE FINANCE LECTURE NOTE PACKET 2 CAPITAL STRUCTURE, DIVIDEND POLICY AND VALUATION

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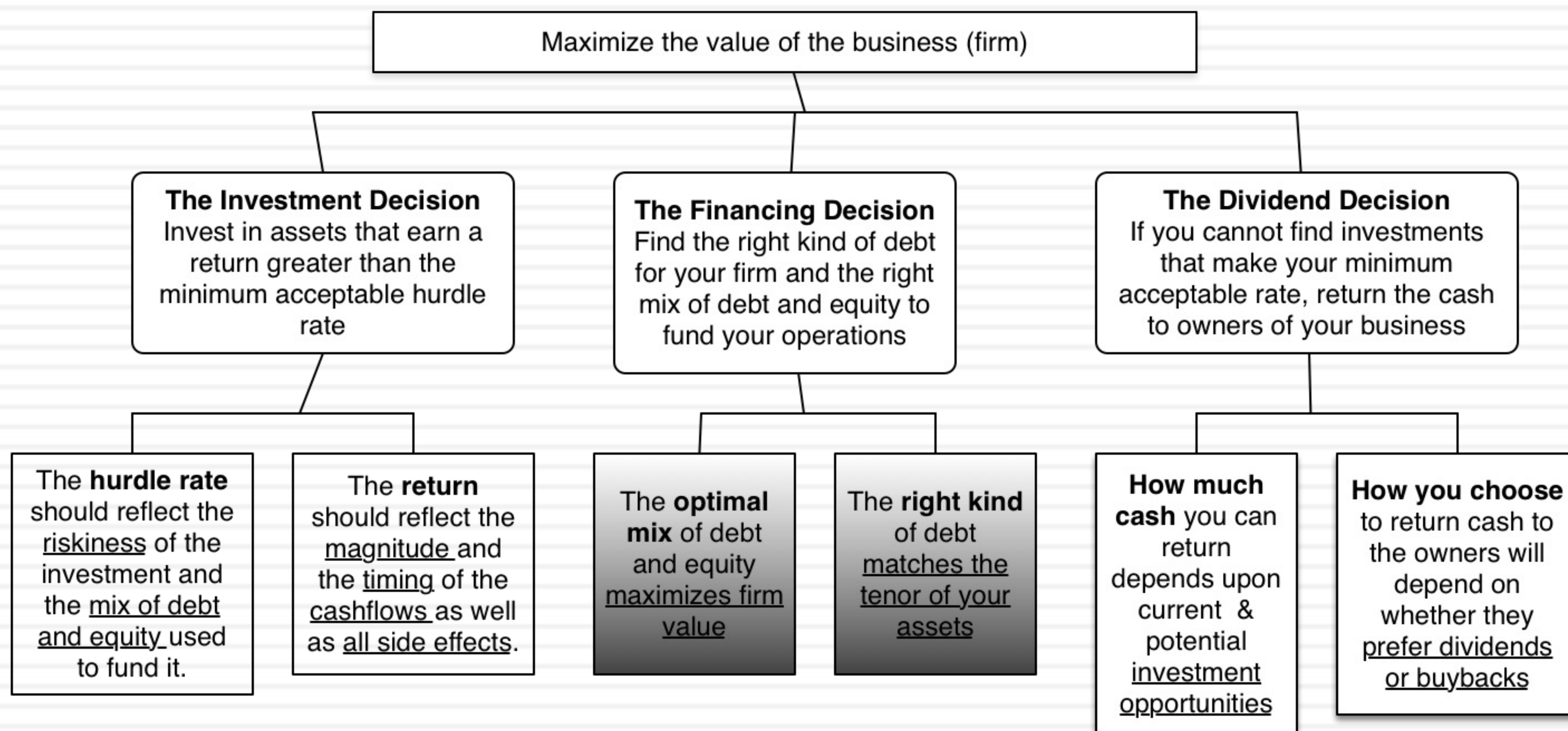
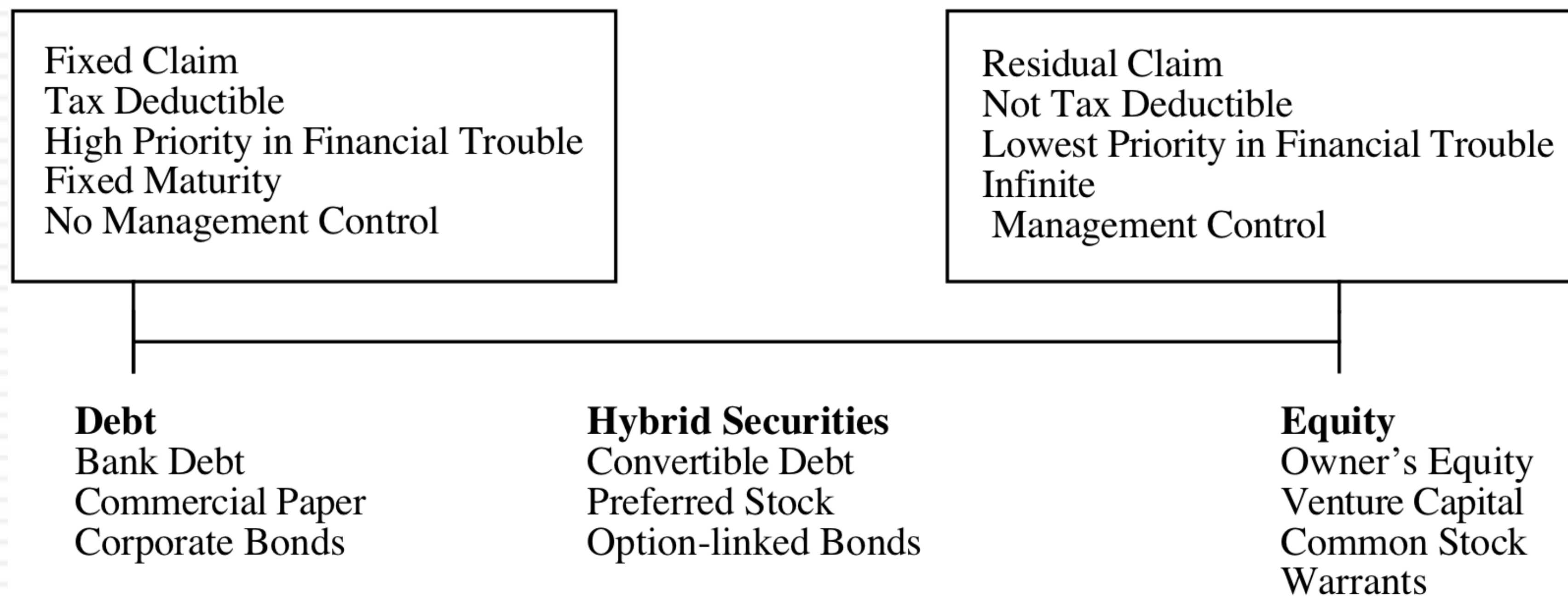
CAPITAL STRUCTURE: THE CHOICES AND THE TRADE OFF

"Neither a borrower nor a lender be"
Someone who obviously hated this part of corporate finance

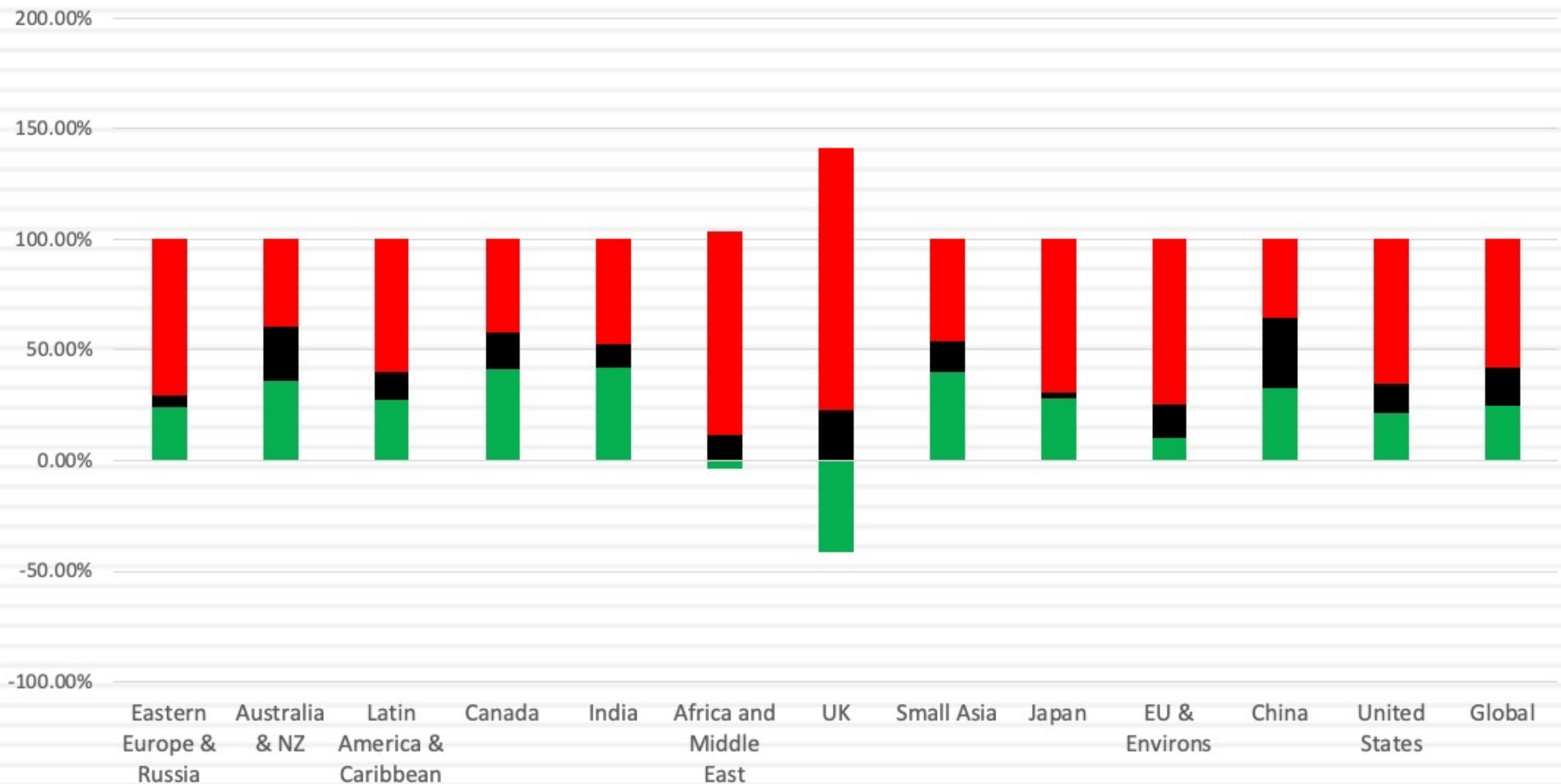
First principles



The Choices in Financing



Global Patterns in Financing…



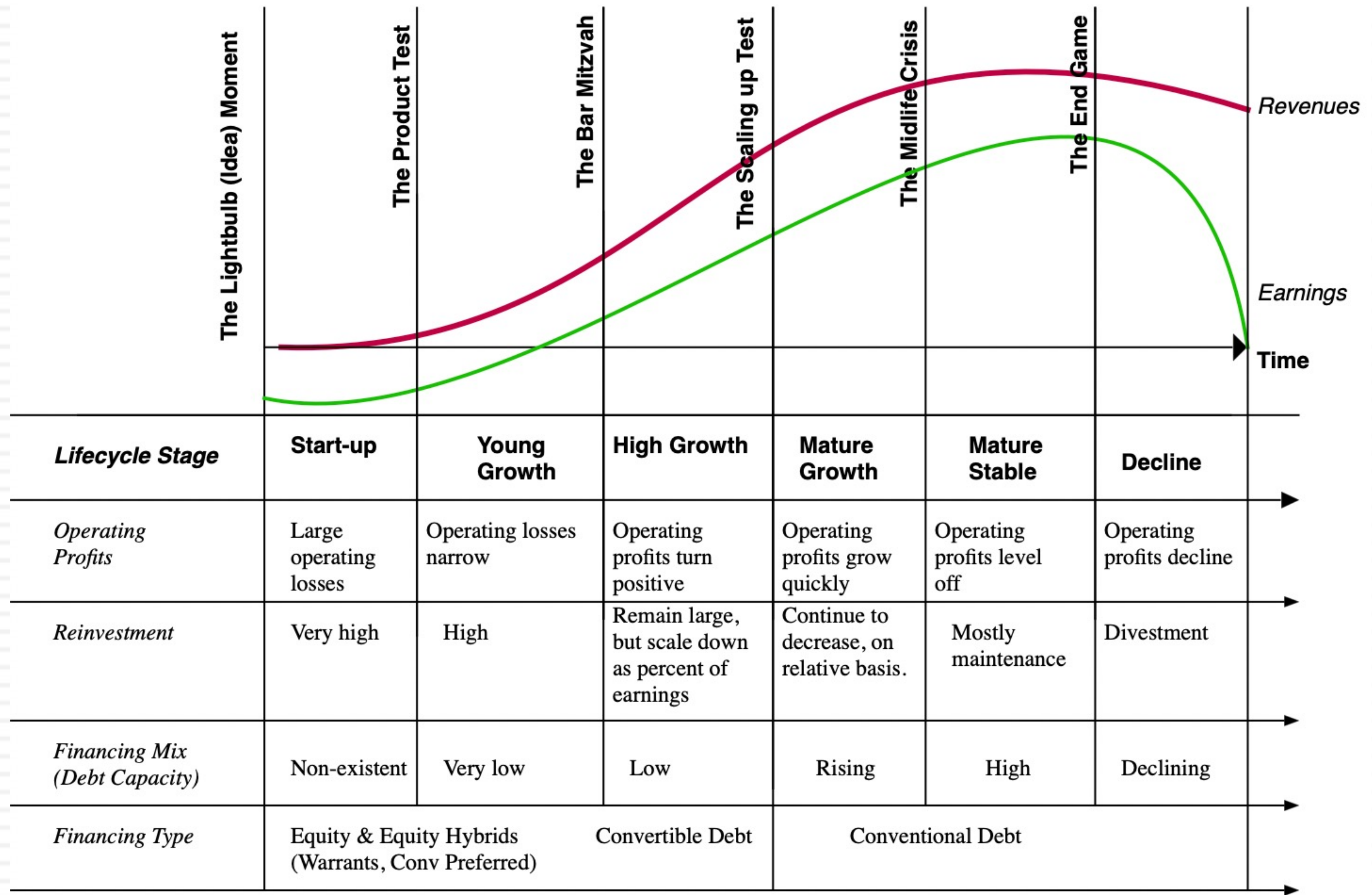
	E. Europe & Russia	Aus & NZ	Latin America	Canada	India	Africa & Mid East	UK	Small Asia	Japan	EU & Enviorns	China	US	Global
Retained Earnings	70.30%	39.50%	59.72%	41.88%	47.41%	92.31%	118.81%	45.75%	69.33%	74.62%	35.22%	65.09%	58.29%
Equity Issuances	5.83%	24.82%	13.08%	17.00%	10.75%	11.45%	22.57%	13.99%	2.71%	14.86%	32.11%	13.32%	17.08%
New Debt Raised	23.87%	35.68%	27.20%	41.12%	41.84%	-3.76%	-41.38%	40.26%	27.96%	10.52%	32.67%	21.59%	24.63%

And a much greater dependence on bank loans outside the US…

- In broad terms, borrowing can come from banks/lenders or from issuing corporate bonds.
- In the United States, companies have had more access to corporate bonds than companies in other markets.
  - That access which initially started for larger companies expanded to cover smaller ones.
  - In the 1980s, Mike Milken opened up the bond market to issuers who had below investment grade ratings with the junk bond market.
- In the last two or three decades, bond markets have opened up for companies in the rest of the world as well.
- As a borrower, with a choice of issuing corporate bonds or raising bank loans, why might you pick one over the other?

Assessing the existing financing choices: Disney, Vale, Tata Motors, Baidu & Bookscape

	Disney	*Vale*	*Tata Motors*	*Baidu*
BV of Interest bearing Debt	$14,288	$48,469	535,914₹	¥17,844
MV of Interest bearing Debt	$13,028	$41,143	477,268₹	¥15,403
Lease Debt	$2,933	$1,248	0.00₹	¥3,051
Type of Debt				
Bank Debt	7.93%	59.97%	62.26%	100.00%
Bonds/Notes	92.07%	40.03%	37.74%	0.00%
Debt Maturity				
<1 year	13.04%	6.08%	0.78%	1.98%
1- 5 years	48.93%	23.12%	30.24%	68.62%
5-10 years	20.31%	29.44%	57.90%	29.41%
10-20 years	4.49%	3.00%	10.18%	0.00%
> 20 years	13.24%	38.37%	0.90%	0.00%
Currency for debt				
Debt in domestic currency	94.51%	34.52%	70.56%	17.90%
Debt in foreign currency	5.49%	65.48%	29.44%	82.10%
Fixed versus Floating rate debt				
Fixed rate debt	94.33%	100.00%	100.00%	94.63%
Floating rate debt	5.67%	0.00%	0.00%	5.37%



Lifecycle Stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Operating Profits	Large operating losses	Operating losses narrow	Operating profits turn positive	Operating profits grow quickly	Operating profits level off	Operating profits decline
Reinvestment	Very high	High	Remain large, but scale down as percent of earnings	Continue to decrease, on relative basis.	Mostly maintenance	Divestment
Financing Mix (Debt Capacity)	Non-existent	Very low	Low	Rising	High	Declining
Financing Type	Equity & Equity Hybrids (Warrants, Conv Preferred)		Convertible Debt	Conventional Debt		

The Transitional Phases..

- The transitions that we see at firms – from fully owned private businesses to venture capital, from private to public and subsequent seasoned offerings are all motivated primarily by the need for capital.
- In each transition, though, there are costs incurred by the existing owners:
  - When venture capitalists enter the firm, they will demand their fair share and more of the ownership of the firm to provide equity.
  - When a firm decides to go public, it has to trade off the greater access to capital markets against the increased disclosure requirements (that emanate from being publicly lists), loss of control and the transactions costs of going public.
  - When making seasoned offerings, firms have to consider issuance costs while managing their relations with equity research analysts and rat

Measuring a firm's financing mix …

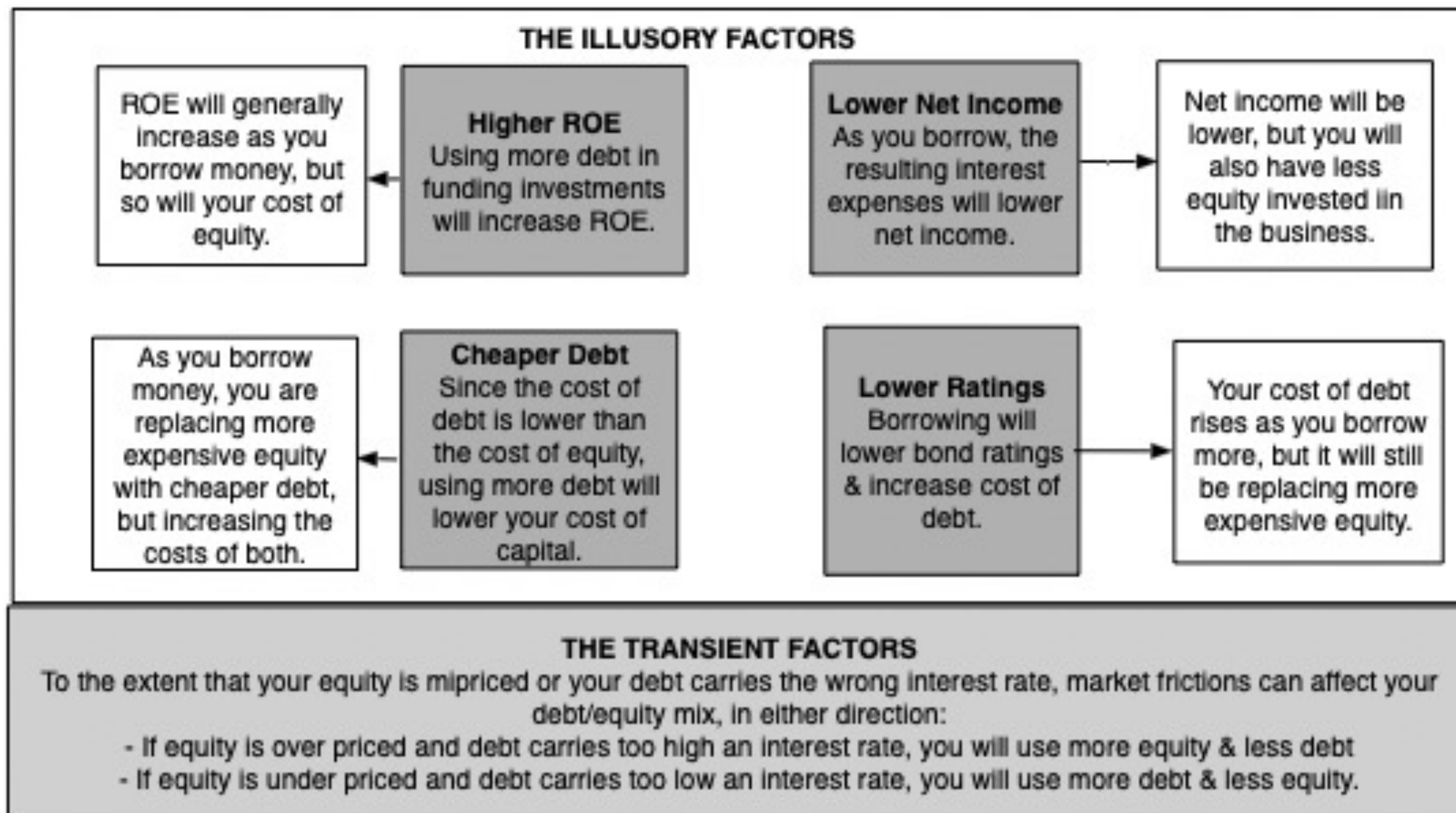
- The simplest measure of how much debt and equity a firm is using currently is to look at the proportion of debt in the total financing. This ratio is called the debt to capital ratio:

  Debt to Capital Ratio = Debt / (Debt + Equity)
- Debt includes all interest bearing liabilities, short term as well as long term. It should also include other commitments that meet the criteria for debt: contractually pre-set payments that have to be made, no matter what the firm's financial standing.
- Equity can be defined either in accounting terms (as book value of equity) or in market value terms (based upon the current price). The resulting debt ratios can be very different.

The Financing Mix Question

- In deciding to raise financing for a business, is there an optimal mix of debt and equity?
  - If yes, what is the trade off that lets us determine this optimal mix?
    - What are the benefits of using debt instead of equity?
    - What are the costs of using debt instead of equity?
  - If not, why not?
- To answer this question, you have to decide what you are optimizing first, and in corporate finance, that is firm value.

The Illusory Benefits of Debt

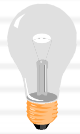


Costs and Benefits of Debt

- Benefits of Debt
  - *Tax Benefits*: The tax code is tilted in favor of debt, with interest payments being tax deductible in most parts of the world, while cash flows to equity are not.
  - *Adds discipline to management*: When managers are sloppy in their project choices, borrowing money may make them less so.
- Costs of Debt
  - *Bankruptcy Costs*: Borrowing money will increase your expected probability and cost of bankruptcy.
  - *Agency Costs*: What's good for stockholders is not always what's good for lenders and that creates friction and costs.
  - *Loss of Future Flexibility*: Using up debt capacity today will mean that you will not be able to draw on it in the future.

Tax Benefits of Debt

- When you borrow money, you are allowed to deduct interest expenses from your income to arrive at taxable income. This reduces your taxes. When you use equity, you are not allowed to deduct payments to equity (such as dividends) to arrive at taxable income.
- The dollar tax benefit from the interest payment in any year is a function of your tax rate and the interest payment:
  - Tax benefit each year = Tax Rate * Interest Payment
  - The caveat is that you need to have the income to cover interest payments to get this tax benefit.
- *Proposition 1: Other things being equal, the higher the marginal tax rate of a business, the more debt it will have in its capital structure.*



The Effects of Taxes

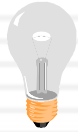
- You are comparing the debt ratios of real estate corporations, which pay the corporate tax rate, and real estate investment trusts, which are not taxed, but are required to pay 95% of their earnings as dividends to their stockholders. Which of these two groups would you expect to have the higher debt ratios?
  a. The real estate corporations
  b. The real estate investment trusts
  c. Cannot tell, without more information

Tax Law and Debt

- At the end of 2017, the United States had one of the highest marginal corporate tax rates in the world (about 40%). Most companies had effective tax rates well below this, with the average effective tax rate closers to 22%. Which tax rate drives the tax benefit of debt and why?
  a. Marginal tax rates
  b. Effective tax rates
- At the end of 2017, a tax reform act passed Congress and became law, lowering the federal corporate tax rate from 36% to 21%? Holding all else constant, what should you expect to see happen to debt at US companies?

Debt adds discipline to management

- If you are managers of a firm with no debt, and you generate high income and cash flows each year, you tend to become complacent. The complacency can lead to inefficiency and investing in poor projects. There is little or no cost borne by the managers
- Forcing such a firm to borrow money can be an antidote to the complacency. The managers now have to ensure that the investments they make will earn at least enough return to cover the interest expenses.
- It is not the bankruptcy, per se, that makes managers disciplined, but the loss of such a job and personal wealth.



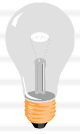
Debt and Discipline

- Assume that you buy into this argument that debt adds discipline to management. Which of the following types of companies will most benefit from debt adding this discipline?

a. Conservatively financed (very little debt), privately owned businesses
b. Conservatively financed, publicly traded companies, with stocks held by millions of investors, none of whom hold a large percent of the stock.
c. Conservatively financed, publicly traded companies, with an activist and primarily institutional holding.

Bankruptcy Cost

- The expected bankruptcy cost is a function of two variables--
  - the probability of bankruptcy, which will depend upon how uncertain you are about future cash flows
  - the cost of going bankrupt
    - direct costs: Legal and other Deadweight Costs
    - indirect costs: Costs arising because people perceive you to be in financial trouble
- *Proposition 2: Firms with more volatile earnings and cash flows will have higher probabilities of bankruptcy at any given level of debt and for any given level of earnings.*
- *Proposition 3: Other things being equal, the greater the indirect bankruptcy cost, the less debt the firm can afford to use for any given level of debt.*



Debt & Bankruptcy Cost

- Rank the following companies on the magnitude of bankruptcy costs from most to least, taking into account both explicit and implicit costs:

a. A Grocery Store
b. An Airplane Manufacturer
c. High Technology company

Agency Cost

- An agency cost arises whenever you hire someone else to do something for you. It arises because your interests(as the principal) may deviate from those of the person you hired (as the agent).
- When you lend money to a business, you are allowing the stockholders to use that money in the course of running that business. Stockholders interests are different from your interests, because
  - You (as lender) are interested in getting your money back
  - Stockholders are interested in maximizing their wealth
- In some cases, the clash of interests can lead to stockholders
  - Investing in riskier projects than you would want them to
  - Paying themselves large dividends when you would rather have them keep the cash in the business.
- *Proposition 4: Other things being equal, the greater the agency problems associated with lending to a firm, the less debt the firm can afford to use.*