

# A Dividend Matrix

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|  |                    | <i>Quality of projects taken: Excess Returns</i>   |   |
|--|--------------------|--|---|
|  |                    | Poor projects  | Good projects   |
| <i>Cash Returned, relative to Free Cash flow to Equity</i> | Cash Return < FCFE | <p><i>Cash Surplus + Poor Projects</i><br/>Significant pressure to pay out more to stockholders as dividends or stock buybacks</p> | <p><i>Cash Surplus + Good Projects</i><br/>Maximum flexibility in setting dividend policy</p> |
|  | Cash return > FCFE | <p><i>Cash Deficit + Poor Projects</i><br/>Reduce or eliminate cash return but real problem is in investment policy.</p>           | <p><i>Cash Deficit + Good Projects</i><br/>Reduce cash payout, if any, to stockholders</p>    |

# More on Microsoft

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- Microsoft had accumulated a cash balance of \$ 43 billion by 2002 by paying out no dividends while generating huge FCFE. At the end of 2003, there was no evidence that Microsoft was being penalized for holding such a large cash balance or that stockholders were becoming restive about the cash balance. There was no hue and cry demanding more dividends or stock buybacks. Why?
- In 2004, Microsoft announced a huge special dividend of \$ 33 billion and made clear that it would try to return more cash to stockholders in the future. What do you think changed?

# Case 1: Disney in 2003

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- FCFE versus Dividends
  - Between 1994 & 2003, Disney generated \$969 million in FCFE each year.
  - Between 1994 & 2003, Disney paid out \$639 million in dividends and stock buybacks each year.
- Cash Balance
  - Disney had a cash balance in excess of \$ 4 billion at the end of 2003.
- Performance measures
  - Between 1994 and 2003, Disney has generated a return on equity, on it's projects, about 2% less than the cost of equity, on average each year.
  - Between 1994 and 2003, Disney's stock has delivered about 3% less than the cost of equity, on average each year.
  - The underperformance has been primarily post 1996 (after the Capital Cities acquisition).

# Can you trust Disney's management?

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- ☐ Given Disney's track record between 1994 and 2003, if you were a Disney stockholder, would you be comfortable with Disney's dividend policy?
  - a. Yes
  - b. No
- ☐ Does the fact that the company is run by Michael Eisner, the CEO for the last 10 years and the initiator of the Cap Cities acquisition have an effect on your decision.
  - a. Yes
  - b. No

# The Bottom Line on Disney Dividends in 2003

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- Disney could have afforded to pay more in dividends during the period of the analysis.
- It chose not to, and used the cash for acquisitions (Capital Cities/ABC) and ill fated expansion plans (Go.com).
- While the company may have flexibility to set its dividend policy a decade ago, its actions over that decade have frittered away this flexibility.
- Bottom line: *Large cash balances would not be tolerated in this company. Expect to face relentless pressure to pay out more dividends.*

# Following up: Disney in 2009

- Between 2004 and 2008, Disney made significant changes:
  - ▣ It replaced its CEO, Michael Eisner, with a new CEO, Bob Iger, who at least on the surface seemed to be more receptive to stockholder concerns.
  - ▣ Its stock price performance improved (positive Jensen's alpha)
  - ▣ Its project choice improved (ROC moved from being well below cost of capital to above)
- The firm also shifted from cash returned  $<$  FCFE to cash returned  $>$  FCFE and avoided making large acquisitions.
- If you were a stockholder in 2009 and Iger made a plea to retain cash in Disney to pursue investment opportunities, would you be more receptive?
  - a. Yes
  - b. No

# Final twist: Disney in 2013

- Disney did return to holding cash between 2008 and 2013, with dividends and buybacks amounting to \$2.6 billion less than the FCFE (with a target debt ratio) over this period.
- Disney continues to earn a return on capital well in excess of the cost of capital and its stock has doubled over the last two years.
- Now, assume that Bob Iger asks you for permission to withhold even more cash to cover future investment needs. Are you likely to go along?
  - a. Yes
  - b. No

## Case 2: Vale – Dividends versus FCFE

|                                       | Aggregate     | Average    |
|---------------------------------------|---------------|------------|
| Net Income                            | \$42,948.00   | \$8,589.60 |
| Dividends                             | \$23,869.00   | \$4,773.80 |
| Dividend Payout Ratio                 | 55.58%        | 87.76%     |
| Stock Buybacks                        | \$5,731.00    | \$1,146.20 |
| Dividends + Buybacks                  | \$29,600.00   | \$5,920.00 |
| Cash Payout Ratio                     | 68.92%        |            |
| Free CF to Equity (pre-debt)          | (\$3,076.00)  | (\$615.20) |
| Free CF to Equity (actual debt)       | (\$1,266.00)  | (\$253.20) |
| Free CF to Equity (target debt ratio) | \$13,252.43   | \$2,650.49 |
| Cash payout as % of pre-debt FCFE     | FCFE negative |            |
| Cash payout as % of actual FCFE       | FCFE negative |            |
| Cash payout as % of target FCFE       | 223.36%       |            |



# Vale: Its your call..

- Vale's managers have asked you for permission to cut dividends (to more manageable levels). Are you likely to go along?
  - a. Yes
  - b. No
- The reasons for Vale's dividend problem lie in its equity structure. Like most Brazilian companies, Vale has two classes of shares - common shares with voting rights and preferred shares without voting rights. However, Vale has committed to paying out 35% of its earnings as dividends to the preferred stockholders. If they fail to meet this threshold, the preferred shares get voting rights. If you own the preferred shares, would your answer to the question above change?
  - a. Yes
  - b. No

# Mandated Dividend Payouts

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- Assume now that the government decides to mandate a minimum dividend payout for all companies. Given our discussion of FCFE, what types of companies will be hurt the most by such a mandate?
  - a. Large companies making huge profits
  - b. Small companies losing money
  - c. High growth companies that are losing money
  - d. High growth companies that are making money
- What if the government mandates a cap on the dividend payout ratio (and a requirement that all companies reinvest a portion of their profits)?

# Case 3: BP: Summary of Dividend Policy: 1982-1991

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| <i>Summary of calculations</i> |                |                           |                |                |
|--------------------------------|----------------|---------------------------|----------------|----------------|
|                                | <i>Average</i> | <i>Standard Deviation</i> | <i>Maximum</i> | <i>Minimum</i> |
| <i>Free CF to Equity</i>       | \$571.10       | \$1,382.29                | \$3,764.00     | (\$612.50)     |
| <i>Dividends</i>               | \$1,496.30     | \$448.77                  | \$2,112.00     | \$831.00       |
| <i>Dividends+Repurchases</i>   | \$1,496.30     | \$448.77                  | \$2,112.00     | \$831.00       |
| <i>Dividend Payout Ratio</i>   | 84.77%         |                           |                |                |
| <i>Cash Paid as % of FCFE</i>  | 262.00%        |                           |                |                |
| <i>ROE - Required return</i>   | -1.67%         | 11.49%                    | 20.90%         | -21.59%        |

# BP: Just Desserts!

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## B.P.'s Shares Plummet After Dividend Is Slashed

By MATTHEW L. WALD

British Petroleum said yesterday that it would cut its dividend by 55 percent, take a pretax restructuring charge of \$1.82 billion for the second quarter and lay off 11,500 employees, or 10 percent of its worldwide work force. The moves came five weeks after Robert B. Horton, B.P.'s chairman, resigned under pressure from the company's outside directors.

Analysts anticipated a dividend cut by the oil company, the world's third largest, but the one announced was at the low end of their expectations. In response, shares of the company's American depository rights, each of which represents 12 shares of the London-based company, dropped \$3.625, or 7.36 percent, to \$45.375. It was the most active issue on the New York Stock Exchange, with 5.89 million shares traded.

The Royal Dutch/Shell group also reported a disappointing quarter yesterday, with earnings on a replacement cost basis — excluding gains or losses on inventory holdings — of \$868 million, down 22 percent.

### Quick: Recovery Seems Unlikely

Adding to the gloom at B.P., the new chief executive, David A. G. Simon, said the prospects for a quick recovery were poor. "External trading conditions are expected to remain difficult, particularly for the downstream oil and chemicals businesses, with growth prospects for the world's economies remaining uncertain," he said in a statement. Downstream oil is an industry term for refining and marketing operations, as distinct from oil production.

Downstream margins in the United States would be hurt later this year, he predicted, when clean air rules

take effect and gasoline must be reformulated to reduce pollution. "In Europe, recovery will depend upon seasonal heating oil demand," Mr. Simon said.

The crude oil market, he predicted, would remain balanced unless Iraqi oil was allowed to re-enter the market. The company said it was well positioned to take advantage of any

## The giant British oil company bet on rising oil prices.

increase in oil prices, but the company's oil production in the United States is declining. B.P. is the largest producer in Alaska.

The market for petrochemicals in Europe remains weak.

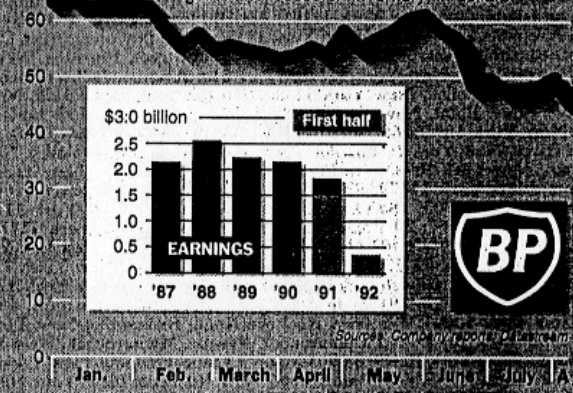
B.P.'s second quarter profits, before one-time transactions, declined to \$193 million from \$515 million, valuing inventories on a replacement-cost basis. James J. Murchie, an analyst at Stanford C. Bernstein, estimated that after exceptional items, earnings per share fell to 30 cents in the second quarter, compared with 62 cents a year earlier.

Analysts attributed B.P.'s problems to the company's acquisitions in the last few years, and heavy capital expenditures. Summing up the company's recent history, Frank P. Kneutzel of Prudential Securities Research said, "Debt rose, interest expense rose, and profits have gone to hell."

Mr. Murchie, who worked for Standard Oil of Ohio, and then B.P.

## Britain's Oil Colossus

British Petroleum's 1992 stock price, weekly closings as traded on the New York Stock Exchange through Aug. 6, and earnings, excluding extraordinary items and gains and losses on inventory, in dollars.



after B.P. acquired Sohio, said, "What you've got is a company that thought oil prices were going to go to \$25 and spent like it, in terms of capital." If B.P.'s costs of finding oil are the same as the industry average, he said, then the company has been spending enough to replace 120 percent to 130 percent of its annual production, which is not a successful strategy if prices do not rise.

In addition, he said, the company had been spending twice as much on its refining and marketing operation

as it was recording in depreciation. Another analyst at a large stock brokerage house, who spoke on the condition of anonymity, said, "They took all the old Sohio stations and turned them into modern B.P. stations; they took all the B.P. stations and turned them into ultramodern stations."

The analyst said that while some of the cuts were obvious, some came

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# Managing changes in dividend policy

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| <i>Category</i>  | <i>Periods Around Announcement Date</i> |                            |                      |
|--|---|----------------------------|----------------------|
|  | <i>Prior Quarter</i>                    | <i>Announcement Period</i> | <i>Quarter After</i> |
| Simultaneous announcement of earnings decline/loss ( $N = 176$ )             | -7.23%                                  | -8.17%                     | +1.80%               |
| Prior announcement of earnings decline or loss ( $N = 208$ )                 | -7.58%                                  | -5.52%                     | +1.07%               |
| Simultaneous announcement of investment or growth opportunities ( $N = 16$ ) | -7.69%                                  | -5.16%                     | +8.79%               |

# Case 4: The Limited: Summary of Dividend Policy: 1983-1992

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| <i>Summary of calculations</i> |                |                           |                |                |
|--------------------------------|----------------|---------------------------|----------------|----------------|
|                                | <i>Average</i> | <i>Standard Deviation</i> | <i>Maximum</i> | <i>Minimum</i> |
| <i>Free CF to Equity</i>       | (\$34.20)      | \$109.74                  | \$96.89        | (\$242.17)     |
| <i>Dividends</i>               | \$40.87        | \$32.79                   | \$101.36       | \$5.97         |
| <i>Dividends+Repurchases</i>   | \$40.87        | \$32.79                   | \$101.36       | \$5.97         |
| <i>Dividend Payout Ratio</i>   | 18.59%         |                           |                |                |
| <i>Cash Paid as % of FCFE</i>  | -119.52%       |                           |                |                |
| <i>ROE - Required return</i>   | 1.69%          | 19.07%                    | 29.26%         | -19.84%        |

# Growth Firms and Dividends

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- High growth firms are sometimes advised to initiate dividends because it increases the potential stockholder base for the company (since there are some investors - like pension funds - that cannot buy stocks that do not pay dividends) and, by extension, the stock price. Do you agree with this argument?
  - a. Yes
  - b. No
- Why?



## 5. Tata Motors

|                                       | Aggregate      | Average       |
|---------------------------------------|----------------|---------------|
| Net Income                            | \$421,338.00   | \$42,133.80   |
| Dividends                             | \$74,214.00    | \$7,421.40    |
| Dividend Payout Ratio                 | 17.61%         | 15.09%        |
| Stock Buybacks                        | \$970.00       | \$97.00       |
| Dividends + Buybacks                  | \$75,184.00    | \$7,518.40    |
| Cash Payout Ratio                     | 17.84%         |               |
| Free CF to Equity (pre-debt)          | (\$106,871.00) | (\$10,687.10) |
| Free CF to Equity (actual debt)       | \$825,262.00   | \$82,526.20   |
| Free CF to Equity (target debt ratio) | \$47,796.36    | \$4,779.64    |
| Cash payout as % of pre-debt FCFE     | FCFE negative  |               |
| Cash payout as % of actual FCFE       | 9.11%          |               |
| Cash payout as % of target FCFE       | 157.30%        |               |

Negative FCFE, largely  
because of acquisitions.



# Summing up...

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Quality of projects taken: ROE versus Cost of Equity

Poor projects

Good projects

|                                     |              |   |  |
|-------------------------------------|--------------|---|--|
| Dividends paid out relative to FCFE | Cash Surplus | <p><i>Cash Surplus + Poor Projects</i></p> <p>Significant pressure to pay out more to stockholders as dividends or stock buybacks</p> | <p><i>Cash Surplus + Good Projects</i></p> <p>Maximum flexibility in setting dividend policy</p> <p>Baidu</p>                            |
|                                     | Cash Deficit | <p><i>Cash Deficit + Poor Projects</i></p> <p>Cut out dividends but real problem is in investment policy.</p> <p>Deutsche Bank</p>    | <p><i>Cash Deficit + Good Projects</i></p> <p>Reduce cash payout, if any, to stockholders</p> <p>Disney</p> <p>Vale</p> <p>Tata Mtrs</p> |



## Application Test: Assessing your firm's dividend policy

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- Compare your firm's dividends to its FCFE, looking at the last 5 years of information.
- Based upon your earlier analysis of your firm's project choices, would you encourage the firm to return more cash or less cash to its owners?
- If you would encourage it to return more cash, what form should it take (dividends versus stock buybacks)?

## II. The Peer Group Approach

- In the peer group approach, you compare your company to similar companies (usually in the same market and sector) to assess whether and if yes, how much to pay in dividends.

|                | <i>Dividend Yield</i> |                        | <i>Dividend Payout</i> |                        |  |                       |                        |
|----------------|-----------------------|------------------------|------------------------|------------------------|--|-----------------------|------------------------|
| <i>Company</i> | <i>2013</i>           | <i>Average 2008-12</i> | <i>2013</i>            | <i>Average 2008-12</i> | <i>Comparable Group</i>                                  | <i>Dividend Yield</i> | <i>Dividend Payout</i> |
| Disney         | 1.09%                 | 1.17%                  | 21.58%                 | 17.11%                 | US Entertainment   | 0.96%                 | 22.51%                 |
| Vale           | 6.56%                 | 4.01%                  | 113.45%                | 37.69%                 | Global Diversified Mining & Iron Ore (Market cap> \$1 b) | 3.07%                 | 316.32%                |
| Tata Motors    | 1.31%                 | 1.82%                  | 16.09%                 | 15.53%                 | Global Autos (Market Cap> \$1 b)                         | 2.13%                 | 27.00%                 |
| Baidu          | 0.00%                 | 0.00%                  | 0.00%                  | 0.00%                  | Global Online Advertising                                | 0.09%                 | 8.66%                  |
| Deutsche Bank  | 1.96%                 | 3.14%                  | 362.63%                | 37.39%                 | European Banks   | 1.96%                 | 79.32%                 |

# A closer look at Disney's peer group

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| <i>Company</i>                 | <i>Market Cap</i> | <i>Dividends</i> | <i>Dividends + Buybacks</i> | <i>Net Income</i> | <i>FCFE</i>   | <i>Dividend Yield</i> | <i>Dividend Payout</i> | <i>Cash Return/FCFE</i> |
|--------------------------------|-------------------|------------------|-----------------------------|-------------------|---------------|-----------------------|------------------------|-------------------------|
| The Walt Disney Company        | \$134,256         | \$1,324          | \$5,411                     | \$6,136           | \$1,503       | 0.99%                 | 21.58%                 | 360.01%                 |
| Twenty-First Century Fox, Inc. | \$79,796          | \$415            | \$2,477                     | \$7,097           | \$2,408       | 0.52%                 | 6.78%                  | 102.87%                 |
| Time Warner Inc                | \$63,077          | \$1,060          | \$4,939                     | \$3,019           | -\$4,729      | 1.68%                 | 27.08%                 | NA                      |
| Viacom, Inc.                   | \$38,974          | \$555            | \$5,219                     | \$2,395           | -\$2,219      | 1.42%                 | 23.17%                 | NA                      |
| The Madison Square Garden Co.  | \$4,426           | \$0              | \$0                         | \$142             | -\$119        | 0.00%                 | 0.00%                  | NA                      |
| Lions Gate Entertainment Corp  | \$4,367           | \$0              | \$0                         | \$232             | -\$697        | 0.00%                 | 0.00%                  | NA                      |
| Live Nation Entertainment, Inc | \$3,894           | \$0              | \$0                         | -\$163            | \$288         | 0.00%                 | NA                     | 0.00%                   |
| Cinemark Holdings Inc          | \$3,844           | \$101            | \$101                       | \$169             | -\$180        | 2.64%                 | 63.04%                 | NA                      |
| MGM Holdings Inc               | \$3,673           | \$0              | \$59                        | \$129             | \$536         | 0.00%                 | 0.00%                  | 11.00%                  |
| Regal Entertainment Group      | \$3,013           | \$132            | \$132                       | \$145             | -\$18         | 4.39%                 | 77.31%                 | NA                      |
| DreamWorks Animation SKG Inc.  | \$2,975           | \$0              | \$34                        | -\$36             | -\$572        | 0.00%                 | NA                     | NA                      |
| AMC Entertainment Holdings     | \$2,001           | \$0              | \$0                         | \$63              | -\$52         | 0.00%                 | 0.00%                  | NA                      |
| World Wrestling Entertainment  | \$1,245           | \$36             | \$36                        | \$31              | -\$27         | 2.88%                 | 317.70%                | NA                      |
| SFX Entertainment Inc.         | \$1,047           | \$0              | \$0                         | -\$16             | -\$137        | 0.00%                 | NA                     | NA                      |
| Carmike Cinemas Inc.           | \$642             | \$0              | \$0                         | \$96              | \$64          | 0.00%                 | 0.00%                  | 0.27%                   |
| Rentrak Corporation            | \$454             | \$0              | \$0                         | -\$23             | -\$13         | 0.00%                 | NA                     | NA                      |
| Reading International, Inc.    | \$177             | \$0              | \$0                         | -\$1              | \$15          | 0.00%                 | 0.00%                  | 0.00%                   |
| <b>Average</b>                 | <b>\$20,462</b>   | <b>\$213</b>     | <b>\$1,083</b>              | <b>\$1,142</b>    | <b>-\$232</b> | <b>0.85%</b>          | <b>41.28%</b>          | <b>79.02%</b>           |
| <b>Median</b>                  | <b>\$3,673</b>    | <b>\$0</b>       | <b>\$34</b>                 | <b>\$129</b>      | <b>-\$27</b>  | <b>0.00%</b>          | <b>6.78%</b>           | <b>5.63%</b>            |

# Going beyond averages... Looking at the market

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- Regressing dividend yield and payout against expected growth across all US companies in January 2014 yields:

$$\begin{array}{lclclcl}
 \text{PYT} = 0.649 & - 0.296 \text{ (BETA)} & & -.800 \text{ (EGR)} & + .300 \text{ (DCAP)} & R^2 = 19.6\% \\
 (32.16) & (15.40) & & (8.90) & (7.33) & \\
 \\
 \text{YLD} = 0.0324 & & - .0154 \text{ (BETA)} & & -.038 \text{ (EGR)} & + .023 \text{ (DCAP)} & R^2 = 25.8\% \\
 (38.81) & & (19.41) & & (13.25) & (13.45) & 
 \end{array}$$

PYT = Dividend Payout Ratio = Dividends/Net Income

YLD = Dividend Yield = Dividends/Current Price

BETA = Beta (Regression or Bottom up) for company

EGR = Expected growth rate in earnings over next 5 years (analyst estimates)

DCAP = Total Debt / (Total Debt + Market Value of equity)

# Using the market regression on Disney

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- To illustrate the applicability of the market regression in analyzing the dividend policy of Disney, we estimate the values of the independent variables in the regressions for the firm.
  - ▣ Beta for Disney (bottom up) = 1.00
  - ▣ Disney's expected growth in earnings per share = 14.73% (analyst estimate)
  - ▣ Disney's market debt to capital ratio = 11.58%
- Substituting into the regression equations for the dividend payout ratio and dividend yield, we estimate a predicted payout ratio:
  - ▣ Predicted Payout =  $.649 - 0.296 (1.00) - .800 (.1473) + .300 (.1158) = .2695$
  - ▣ Predicted Yield =  $0.0324 - .0154 (1.00) - .038 (.1473) + .023 (.1158) = .0140$
- ▣ Based on this analysis, Disney with its dividend yield of 1.09% and a payout ratio of approximately 21.58% is paying too little in dividends. This analysis, however, fails to factor in the huge stock buybacks made by Disney over the last few years.

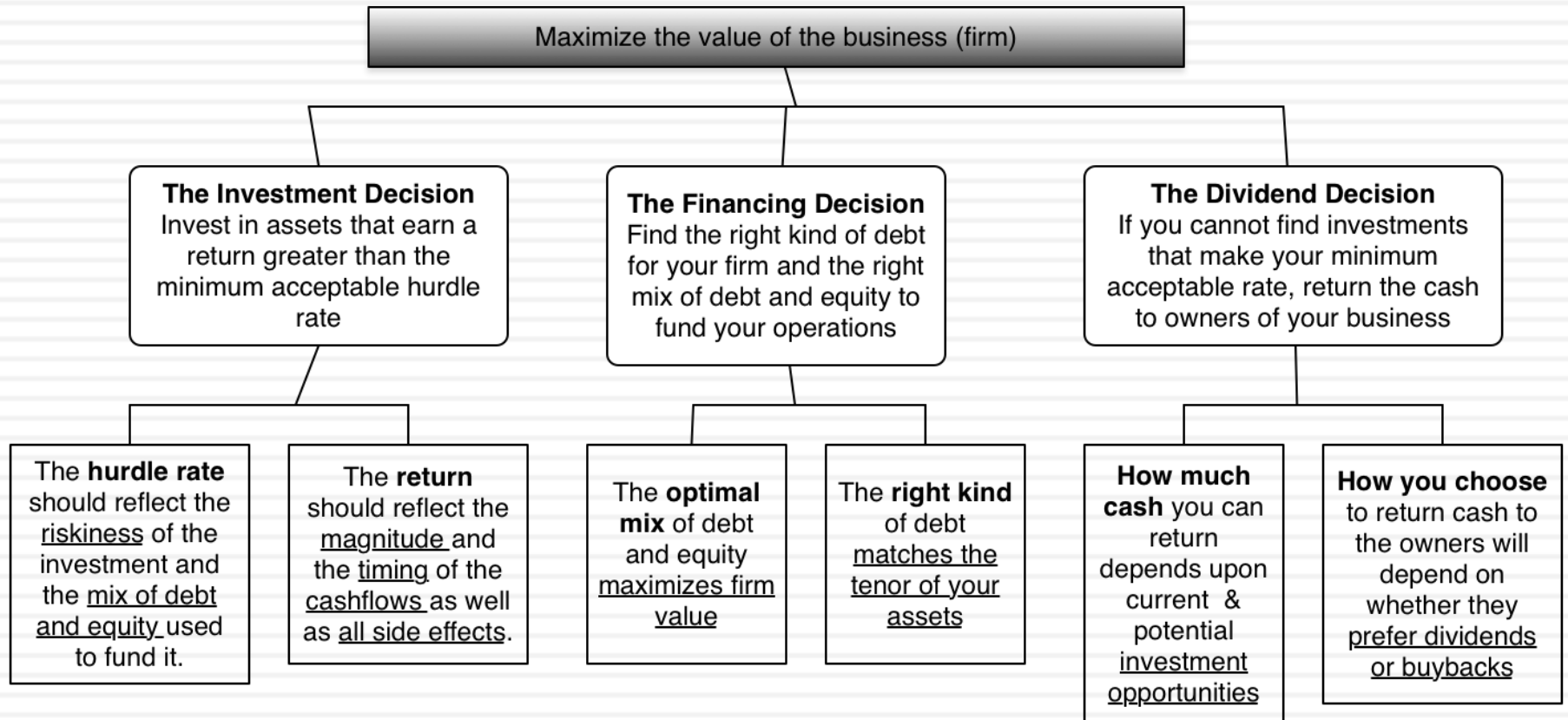


# VALUATION

Cynic: A person who knows the price of everything but the value of nothing..  
Oscar Wilde

# First Principles

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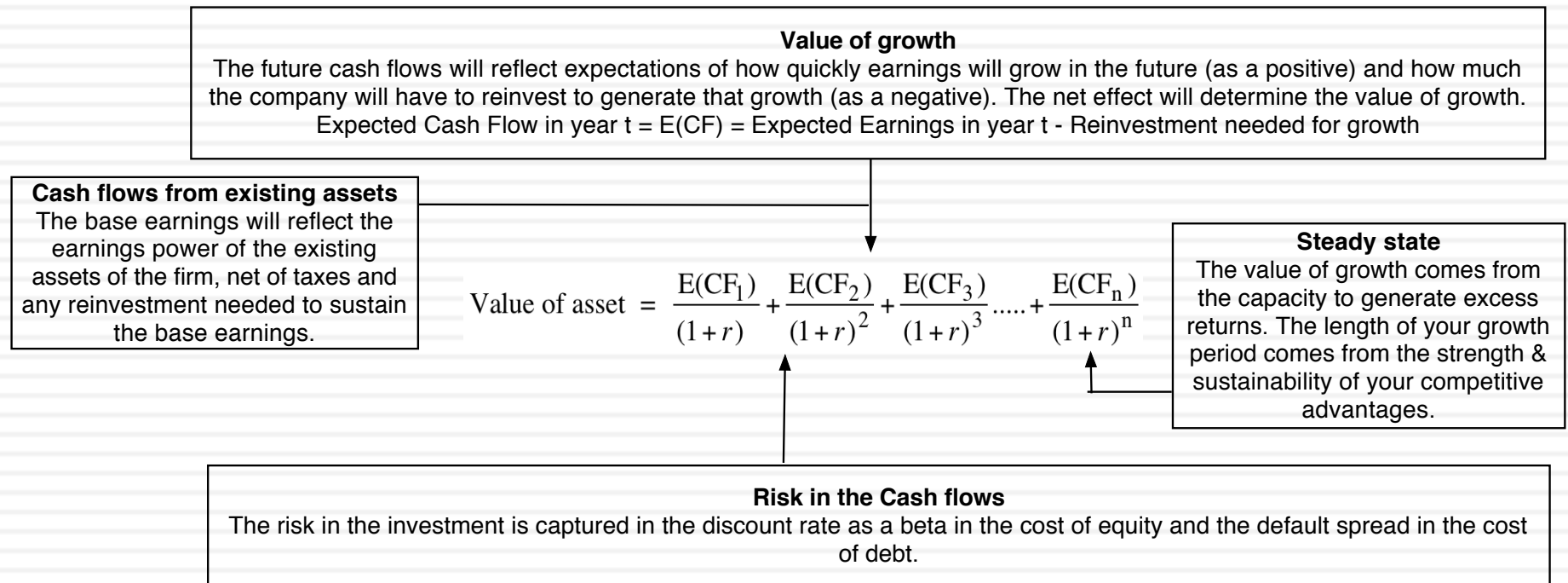
# Three approaches to valuation

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- Intrinsic valuation: The value of an asset is a function of its fundamentals – cash flows, growth and risk. In general, discounted cash flow models are used to estimate intrinsic value.
- Relative valuation: The value of an asset is estimated based upon what investors are paying for similar assets. In general, this takes the form of value or price multiples and comparing firms within the same business.
- Contingent claim valuation: When the cash flows on an asset are contingent on an external event, the value can be estimated using option pricing models.

# One tool for estimating intrinsic value: Discounted Cash Flow Valuation

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# Equity Valuation

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- The value of equity is obtained by discounting expected cashflows to equity, i.e., the residual cashflows after meeting all expenses, tax obligations and interest and principal payments, at the cost of equity, i.e., the rate of return required by equity investors in the firm.

$$\text{Value of Equity} = \sum_{t=1}^{t=n} \frac{\text{CF to Equity}_t}{(1+k_e)^t}$$

where,

CF to Equity<sub>t</sub> = Expected Cashflow to Equity in period t

k<sub>e</sub> = Cost of Equity

- The dividend discount model is a specialized case of equity valuation, and the value of a stock is the present value of expected future dividends.

# Firm Valuation

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- The value of the firm is obtained by discounting expected cashflows to the firm, i.e., the residual cashflows after meeting all operating expenses and taxes, but prior to debt payments, at the weighted average cost of capital, which is the cost of the different components of financing used by the firm, weighted by their market value proportions.

$$\text{Value of Firm} = \sum_{t=1}^{t=n} \frac{\text{CF to Firm}_t}{(1+WACC)^t}$$

where,

CF to Firm<sub>t</sub> = Expected Cashflow to Firm in period t

WACC = Weighted Average Cost of Capital

# Choosing a Cash Flow to Discount

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- When you cannot estimate the free cash flows to equity or the firm, the only cash flow that you can discount is dividends. For financial service firms, it is difficult to estimate free cash flows. For Deutsche Bank, we will be discounting dividends.
- If a firm's debt ratio is not expected to change over time, the free cash flows to equity can be discounted to yield the value of equity. For Tata Motors, we will discount free cash flows to equity.
- If a firm's debt ratio might change over time, free cash flows to equity become cumbersome to estimate. Here, we would discount free cash flows to the firm. For Vale and Disney, we will discount the free cash flow to the firm.

# Stories + Numbers = Value

