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 it's 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

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

BP: Just Desserts!

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

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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 \$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 trad-ing conditions are expected to remain difficult, particularly for the down-stream 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.

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take effect and gasoline must be re-formulated to reduce pollution. "In Europe, recovery will dezend upon seasonal heating oil de " nd," Mr. Simon said,

The crude oil market, he predicted, would remain balanced unless Iraqi oil was allowed to re-enter the market. The compary said it was well positioned to tr e 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 replace-ment-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 prob-

lems to the company's acquisitions in the last few years, and heavy capital expenditures. Summing up the com-pany's recent history, Frank P. Kneuttel of Prudential Securities Repense rose, and profits have gone to hell."

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

Jan, Feb. March April May Junet July A after B.P. acquired Sohlo, 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 pro-

'88 '89 '90 '91

Britain's Oll Colossus

\$3:0 billion

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Entren Petroleum¹8 1992 stock price, weekly olosings stances don the New York Stock Exchange induge address and eatnings, excluding extraordinaty trans

ains and losses on inventory in dollars.

First half

duction, which is not a successful strategy if prices do not rise. In addition, he said, the companyhad been spending twice as much on its refining and marketing operation

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1101-1930 A. A. W. S. 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 Sohlo stations and turned them into modern B.P. sta-tions; they took all the B.P. stations and turned them into ultramodern .*

and turned them includes a stations." The analyst said that while some of the 'cuts were: obvious is some came is the 'cuts' were continued on Page D2.

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Managing changes in dividend policy

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Periods Around Announcement Date							
Category	Prior Quarter	Announcement Period	Quarter After				
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

		Summary of calculations				
	Average	Standard Deviation	Maximum	Minimum		
Free CF to Equity	(\$34.20)	\$109.74	\$96.89	(\$242.17)		
Dividends	\$40.87	\$32.79	\$101.36	\$5.97		
Dividends+Repurchases	\$40.87	\$32.79	\$101.36	\$5.97		
Dividend Payout Ratio	18.59%					
Cash Paid as % of FCFE	-119.52%					
ROE - Required return	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 its 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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	<i>Quality of projects taker</i> Poor projects	n: ROE versus Cost of Equity Good projects
<i>it relative to FCFE</i> Cash Surplus	<i>Cash Surplus + Poor</i> <i>Projects</i> Significant pressure to pay out more to stockholders as dividends or stock buybacks	Baidu Cash Surplus + Good Projects Maximum flexibility in setting dividend policy
Dividends paid o Cash Deficit	Deutsche Bank Cash Deficit + Poor Projects Cut out dividends but real problem is in investment policy.	Disney <i>Cash Deficit + Good</i> <i>Projects</i> Reduce cash payout, if any, to stockholders Vale Tata Mtrs

- 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.

	D	ividend Yield	Dividend Payout				
Company	2013	Average 2008-12	2013	Average 2008-12	Comparable Group	Dividend Yield	Dividend Payout
Disney	1.09%	1.17%	21.58%	17.11%	US Entertainment	0.96%	22.51%
					Global Diversified		
					Mining & Iron Ore		
Vale	6.56%	4.01%	113.45%	37.69%	(Market cap> \$1 b)	3.07%	316.32%
					Global Autos (Market		
Tata Motors	1.31%	1.82%	16.09%	15.53%	Cap> \$1 b)	2.13%	27.00%
					Global Online		
Baidu	0.00%	0.00%	0.00%	0.00%	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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Company	Market Cap	Dividends	Dividends + Buybacks	Net Income	FCFE	Dividend Yield	Dividend Payout	Cash Return/FCFE
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%
Average	\$20,462	\$213	\$1,083	\$1,142	-\$232	0.85%	41.28%	79.02%
Median	\$3,673	\$0	\$34	\$129	-\$27	0.00%	6.78%	5.63%

Going beyond averages... Looking at the market

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

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

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

- 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.
- <u>Relative valuation</u>: 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.
- <u>Contingent claim valuation</u>: 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

Value of growth

The future cash flows will reflect expectations of how quickly earnings will grow in the future (as a positive) and how much the company will have to reinvest to generate that growth (as a negative). The net effect will determine the value of growth. Expected Cash Flow in year t = E(CF) = Expected Earnings in year t - Reinvestment needed for growth



Risk in the Cash flows

The risk in the investment is captured in the discount rate as a beta in the cost of equity and the default spread in the cost of debt.

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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.

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

where,

CF to Equity t = Expected Cashflow to Equity in period t

ke = 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

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.

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

where,

CF to Firm_t = 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



The Ingredients that determine value.

