Measures of Dividend Policy

- **Dividend Payout** = Dividends/ Net Income
  - Measures the percentage of earnings that the company pays in dividends
  - If the net income is negative, the payout ratio cannot be computed.

- **Dividend Yield** = Dividends per share/ Stock price
  - Measures the return that an investor can make from dividends alone
  - Becomes part of the expected return on the investment.
Dividend Payout Ratio: January 2017

Payout Ratios at the start of 2017: US and Global Firms

<table>
<thead>
<tr>
<th>Broad Group</th>
<th>25th Perc.</th>
<th>Median</th>
<th>75th Perc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia, NZ and Canada</td>
<td>36.49%</td>
<td>59.49%</td>
<td>86.16%</td>
</tr>
<tr>
<td>Developed Europe</td>
<td>25.42%</td>
<td>45.69%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>21.71%</td>
<td>42.09%</td>
<td>75.24%</td>
</tr>
<tr>
<td>Japan</td>
<td>16.80%</td>
<td>26.13%</td>
<td>38.72%</td>
</tr>
<tr>
<td>United States</td>
<td>24.42%</td>
<td>41.58%</td>
<td>74.93%</td>
</tr>
</tbody>
</table>

Aswath Damodaran
Dividend Yields: January 2017

Dividend Yields at the start of 2017: US & Global

<table>
<thead>
<tr>
<th>Broad Group</th>
<th>25th Perc.</th>
<th>Median</th>
<th>75th Perc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia, NZ and Canada</td>
<td>1.77%</td>
<td>3.39%</td>
<td>5.09%</td>
</tr>
<tr>
<td>Developed Europe</td>
<td>1.62%</td>
<td>2.84%</td>
<td>4.68%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>0.88%</td>
<td>2.27%</td>
<td>4.62%</td>
</tr>
<tr>
<td>Japan</td>
<td>1.33%</td>
<td>2.08%</td>
<td>2.81%</td>
</tr>
<tr>
<td>United States</td>
<td>1.17%</td>
<td>2.12%</td>
<td>3.47%</td>
</tr>
</tbody>
</table>

Aswath Damodaran
### Figure 10.7: Life Cycle Analysis of Dividend Policy

<table>
<thead>
<tr>
<th>External funding needs</th>
<th>High, but constrained by infrastructure</th>
<th>High, relative to firm value.</th>
<th>Moderates, relative to firm value.</th>
<th>Low, as projects dry up.</th>
<th>Low, as projects dry up.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal financing</strong></td>
<td>Negative or low</td>
<td>Negative or low</td>
<td>Low, relative to funding needs</td>
<td>High, relative to funding needs</td>
<td>More than funding needs</td>
</tr>
<tr>
<td><strong>Capacity to pay dividends</strong></td>
<td>None</td>
<td>None</td>
<td>Very low</td>
<td>Increasing</td>
<td>High</td>
</tr>
<tr>
<td><strong>Growth stage</strong></td>
<td>Stage 1: Start-up</td>
<td>Stage 2: Rapid Expansion</td>
<td>Stage 3: High Growth</td>
<td>Stage 4: Mature Growth</td>
<td>Stage 5: Decline</td>
</tr>
</tbody>
</table>
Dividend Yields and Payout Ratios: Growth Classes

Dividend Yields and Payout Ratios: By Growth Class

Aswath Damodaran
### Dividend Policy: Disney, Vale, Tata Motors, Baidu and Deutsche Bank

<table>
<thead>
<tr>
<th></th>
<th>Disney</th>
<th>Vale</th>
<th>Tata Motors</th>
<th>Baidu</th>
<th>Deutsche Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend Yield - Last 12 months</td>
<td>1.09%</td>
<td>6.56%</td>
<td>1.31%</td>
<td>0.00%</td>
<td>1.96%</td>
</tr>
<tr>
<td>Dividend Payout ratio - Last 12 months</td>
<td>21.58%</td>
<td>113.45%</td>
<td>16.09%</td>
<td>0.00%</td>
<td>362.63%</td>
</tr>
<tr>
<td>Dividend Yield - 2008-2012</td>
<td>1.17%</td>
<td>4.01%</td>
<td>1.82%</td>
<td>0.00%</td>
<td>3.14%</td>
</tr>
<tr>
<td>Dividend Payout - 2008-2012</td>
<td>17.11%</td>
<td>37.69%</td>
<td>15.53%</td>
<td>0.00%</td>
<td>37.39%</td>
</tr>
</tbody>
</table>
Three Schools Of Thought On Dividends

1. If there are no tax disadvantages associated with dividends & companies can issue stock, at no issuance cost, to raise equity, whenever needed
   Dividends do not matter, and dividend policy does not affect value.

2. If dividends create a tax disadvantage for investors (relative to capital gains)
   Dividends are bad, and increasing dividends will reduce value

3. If dividends create a tax advantage for investors (relative to capital gains) and/or stockholders like dividends
   Dividends are good, and increasing dividends will increase value

Aswath Damodaran
The balanced viewpoint

- If a company has excess cash, and few good investment opportunities (NPV>0), returning money to stockholders (dividends or stock repurchases) is good.
- If a company does not have excess cash, and/or has several good investment opportunities (NPV>0), returning money to stockholders (dividends or stock repurchases) is bad.
The Dividends don’t matter school
The Miller Modigliani Hypothesis

- **The Miller-Modigliani Hypothesis:** Dividends do not affect value
- **Basis:**
  - If a firm's investment policies (and hence cash flows) don't change, the value of the firm cannot change as it changes dividends.
  - If a firm pays more in dividends, it will have to issue new equity to fund the same projects. By doing so, it will reduce expected price appreciation on the stock but it will be offset by a higher dividend yield.
  - If we ignore personal taxes, investors have to be indifferent to receiving either dividends or capital gains.
- **Underlying Assumptions:**
  1. There are no tax differences to investors between dividends and capital gains.
  2. If companies pay too much in cash, they can issue new stock, with no flotation costs or signaling consequences, to replace this cash.
  3. If companies pay too little in dividends, they do not use the excess cash for bad projects or acquisitions.
II. The Dividends are “bad” school: And the evidence to back them up...

Figure 10.10: Tax rates on Dividends and Capital Gains - US

Difference between dividend tax rate & capital gains peaks at 66% in 1950s.

Dividends & capital gains taxed at same rate since 2003.

Aswath Damodaran
Assume that you are the owner of a stock that is approaching an ex-dividend day and you know that dollar dividend with certainty. In addition, assume that you have owned the stock for several years.

Initial buy
At $P$

\[ P = \text{Price at which you bought the stock a “while” back} \]

\[ P_b = \text{Price before the stock goes ex-dividend} \]

\[ P_a = \text{Price after the stock goes ex-dividend} \]

\[ D = \text{Dividends declared on stock} \]

\[ t_o, t_cg = \text{Taxes paid on ordinary income and capital gains respectively} \]
The cash flows from selling before ex-dividend day are:

\[ P_b - (P_b - P) \times t_{cg} \]

The cash flows from selling after ex-dividend day are:

\[ P_a - (P_a - P) \times t_{cg} + D(1-t_o) \]

Since the average investor should be indifferent between selling before the ex-dividend day and selling after the ex-dividend day -

\[ P_b - (P_b - P) \times t_{cg} = P_a - (P_a - P) \times t_{cg} + D(1-t_o) \]

Some basic algebra leads us to the following:

\[ \frac{P_b - P_a}{D} = \frac{1 - t_o}{1 - t_{cg}} \]
The relationship between the price change on the ex-dividend day and the dollar dividend will be determined by the difference between the tax rate on dividends and the tax rate on capital gains for the typical investor in the stock.

<table>
<thead>
<tr>
<th>Tax Rates</th>
<th>Ex-dividend day behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>If dividends and capital gains are taxed equally</td>
<td>Price change = Dividend</td>
</tr>
<tr>
<td>If dividends are taxed at a higher rate than capital gains</td>
<td>Price change &lt; Dividend</td>
</tr>
<tr>
<td>If dividends are taxed at a lower rate than capital gains</td>
<td>Price change &gt; Dividend</td>
</tr>
</tbody>
</table>
The empirical evidence...

1966-1969
- Ordinary tax rate = 70%
- Capital gains rate = 28%
- Price change as % of Dividend = 78%

1981-1985
- Ordinary tax rate = 50%
- Capital gains rate = 20%
- Price change as % of Dividend = 85%

1986-1990
- Ordinary tax rate = 28%
- Capital gains rate = 28%
- Price change as % of Dividend = 90%
Dividend Arbitrage

Assume that you are a tax exempt investor, and that you know that the price drop on the ex-dividend day is only 90% of the dividend. How would you exploit this differential?

a. Invest in the stock for the long term
b. Sell short the day before the ex-dividend day, buy on the ex-dividend day
c. Buy just before the ex-dividend day, and sell after.
d. _________________________________
Example of dividend capture strategy with tax factors

- XYZ company is selling for $50 at close of trading May 3. On May 4, XYZ goes ex-dividend; the dividend amount is $1. The price drop (from past examination of the data) is only 90% of the dividend amount.

- The transactions needed by a tax-exempt U.S. pension fund for the arbitrage are as follows:
  1. Buy 1 million shares of XYZ stock cum-dividend at $50/share.
  2. Wait till stock goes ex-dividend; Sell stock for $49.10/share \((50 - 1 \times 0.90)\)
  3. Collect dividend on stock.

- Net profit = - 50 million + 49.10 million + 1 million = $0.10 million
Two bad reasons for paying dividends

1. The bird in the hand fallacy

- **Argument**: Dividends now are more certain than capital gains later. Hence dividends are more valuable than capital gains. Stocks that pay dividends will therefore be more highly valued than stocks that do not.

- **Counter**: The appropriate comparison should be between dividends today and price appreciation today. The stock price drops on the ex-dividend day.
2. We have excess cash this year...

- **Argument**: The firm has excess cash on its hands this year, no investment projects this year and wants to give the money back to stockholders.

- **Counter**: So why not just repurchase stock? If this is a one-time phenomenon, the firm has to consider future financing needs. The cost of raising new financing in future years, especially by issuing new equity, can be staggering.
Figure 10.12: Issuance Costs for Stocks and Bonds
Three “good” reasons for paying dividends...

- **Clientele Effect**: The investors in your company like dividends.

- **The Signalling Story**: Dividends can be signals to the market that you believe that you have good cash flow prospects in the future.

- **The Wealth Appropriation Story**: Dividends are one way of transferring wealth from lenders to equity investors (this is good for equity investors but bad for lenders)
1. The Clientele Effect
The “strange case” of Citizen’s Utility

Class A shares pay cash dividend

Class B shares offer the same amount as a stock dividend & can be converted to class A shares
Evidence from Canadian firms

<table>
<thead>
<tr>
<th>Company</th>
<th>Premium for cash dividend shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated Bathurst</td>
<td>+ 19.30%</td>
</tr>
<tr>
<td>Donfasco</td>
<td>+ 13.30%</td>
</tr>
<tr>
<td>Dome Petroleum</td>
<td>+ 0.30%</td>
</tr>
<tr>
<td>Imperial Oil</td>
<td>+12.10%</td>
</tr>
<tr>
<td>Newfoundland Light &amp; Power</td>
<td>+ 1.80%</td>
</tr>
<tr>
<td>Royal Trustco</td>
<td>+ 17.30%</td>
</tr>
<tr>
<td>Stelco</td>
<td>+ 2.70%</td>
</tr>
<tr>
<td>TransAlta</td>
<td>+1.10%</td>
</tr>
<tr>
<td>Average across companies</td>
<td>+ 7.54%</td>
</tr>
</tbody>
</table>
A clientele based explanation

- **Basis:** Investors may form clienteles based upon their tax brackets. Investors in high tax brackets may invest in stocks which do not pay dividends and those in low tax brackets may invest in dividend paying stocks.

- **Evidence:** A study of 914 investors' portfolios was carried out to see if their portfolio positions were affected by their tax brackets. The study found that:
  1. (a) Older investors were more likely to hold high dividend stocks and
  2. (b) Poorer investors tended to hold high dividend stocks
## Results from Regression: Clientele Effect

\[
\text{Dividend Yield}_t = a + b \delta_t + c \text{Age}_t + d \text{Income}_t + e \text{Differential Tax Rate}_t + \epsilon
\]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Implies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.22%</td>
<td></td>
</tr>
<tr>
<td>Beta Coefficient</td>
<td>-2.145</td>
<td>Higher beta stocks pay lower dividends.</td>
</tr>
<tr>
<td>Age/100</td>
<td>3.131</td>
<td>Firms with older investors pay higher dividends.</td>
</tr>
<tr>
<td>Income/1000</td>
<td>-3.726</td>
<td>Firms with wealthier investors pay lower dividends.</td>
</tr>
<tr>
<td>Differential Tax Rate</td>
<td>-2.849</td>
<td>If ordinary income is taxed at a higher rate than capital gains, the firm pays less dividends.</td>
</tr>
</tbody>
</table>
Assume that you run a phone company, and that you have historically paid large dividends. You are now planning to enter the telecommunications and media markets. Which of the following paths are you most likely to follow?

a. Courageously announce to your stockholders that you plan to cut dividends and invest in the new markets.

b. Continue to pay the dividends that you used to, and defer investment in the new markets.

c. Continue to pay the dividends that you used to, make the investments in the new markets, and issue new stock to cover the shortfall.

d. Other
2. Dividends send a signal”
Increases in dividends are good news..
But higher or new dividends may signal bad news (not good)

Dividend Initiations and Earnings Growth

Annual Earnings Growth Rate

Year relative to dividend initiation (Before and after)

1 2 3 4

-4 -3 -2 -1

Dividends Initiated here

Aswath Damodaran
Both dividend increases and decreases are becoming less informative...

Market Reaction to Dividend Changes over time: US companies

- Dividend Increases
- Dividend Decreases
3. Dividend increases may be good for stocks... but bad for bonds.
What managers believe about dividends...

<table>
<thead>
<tr>
<th>Statement of Management Beliefs</th>
<th>Agree</th>
<th>No Opinion</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A firm’s dividend payout ratio affects the price of the stock.</td>
<td>61%</td>
<td>33%</td>
<td>6%</td>
</tr>
<tr>
<td>2. Dividend payments provide a signaling device of future prospects.</td>
<td>52%</td>
<td>41%</td>
<td>7%</td>
</tr>
<tr>
<td>3. The market uses dividend announcements as information for assessing firm value.</td>
<td>43%</td>
<td>51%</td>
<td>6%</td>
</tr>
<tr>
<td>4. Investors have different perceptions of the relative riskiness of dividends and retained earnings.</td>
<td>56%</td>
<td>42%</td>
<td>2%</td>
</tr>
<tr>
<td>5. Investors are basically indifferent with regard to returns from dividends and capital gains.</td>
<td>6%</td>
<td>30%</td>
<td>64%</td>
</tr>
<tr>
<td>6. A stockholder is attracted to firms that have dividend policies appropriate to the stockholder’s tax environment.</td>
<td>44%</td>
<td>49%</td>
<td>7%</td>
</tr>
<tr>
<td>7. Management should be responsive to shareholders’ preferences regarding dividends.</td>
<td>41%</td>
<td>49%</td>
<td>10%</td>
</tr>
</tbody>
</table>
ASSESSING DIVIDEND POLICY: OR HOW MUCH CASH IS TOO MUCH?

It is my cash and I want it now...
The Big Picture...

Maximize the value of the business (firm)

The Investment Decision
Invest in assets that earn a return greater than the minimum acceptable hurdle rate

The Financing Decision
Find the right kind of debt for your firm and the right mix of debt and equity to fund your operations

The Dividend Decision
If you cannot find investments that make your minimum acceptable rate, return the cash to owners of your business

The hurdle rate should reflect the riskiness of the investment and the mix of debt and equity used to fund it.

The return should reflect the magnitude and the timing of the cashflows as well as all side effects.

The optimal mix of debt and equity maximizes firm value.

The right kind of debt matches the tenor of your assets.

How much cash you can return depends upon current & potential investment opportunities.

How you choose to return cash to the owners will depend on whether they prefer dividends or buybacks.

Aswath Damodaran
Assessing Dividend Policy

- **Approach 1: The Cash/Trust Nexus**
  - Assess how much cash a firm has available to pay in dividends, relative what it returns to stockholders. Evaluate whether you can trust the managers of the company as custodians of your cash.

- **Approach 2: Peer Group Analysis**
  - Pick a dividend policy for your company that makes it comparable to other firms in its peer group.
I. The Cash/Trust Assessment

Step 1: How much did the company actually pay out during the period in question?

Step 2: How much could the company have paid out during the period under question?

Step 3: How much do I trust the management of this company with excess cash?

- How well did they make investments during the period in question?
- How well has my stock performed during the period in question?
As firms increasing use stock buybacks, we have to measure cash returned to stockholders as not only dividends but also buybacks.

For instance, for the five companies we are analyzing the cash returned looked as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>Disney Dividends</th>
<th>Disney Buybacks</th>
<th>Vale Dividends</th>
<th>Vale Buybacks</th>
<th>Tata Motors Dividends</th>
<th>Tata Motors Buybacks</th>
<th>Baidu Dividends</th>
<th>Baidu Buybacks</th>
<th>Deutsche Bank Dividends</th>
<th>Deutsche Bank Buybacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>$648</td>
<td>$648</td>
<td>$2,993</td>
<td>$741</td>
<td>7,595₹</td>
<td>0₹</td>
<td>¥0</td>
<td>¥0</td>
<td>2,274 €</td>
<td>0 €</td>
</tr>
<tr>
<td>2009</td>
<td>$653</td>
<td>$2,669</td>
<td>$2,771</td>
<td>$9</td>
<td>3,496₹</td>
<td>0₹</td>
<td>¥0</td>
<td>¥0</td>
<td>309 €</td>
<td>0 €</td>
</tr>
<tr>
<td>2010</td>
<td>$756</td>
<td>$4,993</td>
<td>$3,037</td>
<td>$1,930</td>
<td>10,195₹</td>
<td>0₹</td>
<td>¥0</td>
<td>¥0</td>
<td>465 €</td>
<td>0 €</td>
</tr>
<tr>
<td>2011</td>
<td>$1,076</td>
<td>$3,015</td>
<td>$9,062</td>
<td>$3,051</td>
<td>15,031₹</td>
<td>0₹</td>
<td>¥0</td>
<td>¥0</td>
<td>691 €</td>
<td>0 €</td>
</tr>
<tr>
<td>2012</td>
<td>$1,324</td>
<td>$4,087</td>
<td>$6,006</td>
<td>$0</td>
<td>15,088₹</td>
<td>970₹</td>
<td>¥0</td>
<td>¥0</td>
<td>689 €</td>
<td>0 €</td>
</tr>
<tr>
<td>2008-12</td>
<td>$4,457</td>
<td>$15,412</td>
<td>$23,869</td>
<td>$5,731</td>
<td>51,405₹</td>
<td>970₹</td>
<td>¥0</td>
<td>¥0</td>
<td>¥4,428</td>
<td>¥0</td>
</tr>
</tbody>
</table>

Aswath Damodaran
The Free Cashflow to Equity (FCFE) is a measure of how much cash is left in the business after non-equity claimholders (debt and preferred stock) have been paid, and after any reinvestment needed to sustain the firm’s assets and future growth.

Net Income
+ Depreciation & Amortization
= Cash flows from Operations to Equity Investors
- Preferred Dividends
- Capital Expenditures
- Working Capital Needs
= FCFE before net debt cash flow (Owner’s Earnings)
+ New Debt Issues
- Debt Repayments
= FCFE after net debt cash flow