Returning Cash to the Owners: Dividend Policy
First Principles

- Invest in projects that yield a return greater than the minimum acceptable hurdle rate.
  - The hurdle rate should be higher for riskier projects and reflect the financing mix used - owners’ funds (equity) or borrowed money (debt).
  - Returns on projects should be measured based on cash flows generated and the timing of these cash flows; they should also consider both positive and negative side effects of these projects.

- Choose a financing mix that minimizes the hurdle rate and matches the assets being financed.

- If there are not enough investments that earn the hurdle rate, return the cash to stockholders.
  - The form of returns - dividends and stock buybacks - will depend upon the stockholders’ characteristics.

Objective: Maximize the Value of the Firm
Steps to the Dividend Decision…

How much did you borrow?

- Cashflows to Debt (Principal repaid, Interest Expenses)

How good are your investment choices?

- Reinvestment back into the business

What is a reasonable cash balance?

- Cash held back by the company

What do your stockholders prefer?

- Cash available for return to stockholders

Stock Buybacks

Cash Paid out

Dividends
I. Dividends are sticky
II. Dividends tend to follow earnings
III. More and more firms are buying back stock, rather than pay dividends...
IV. But the change in dividend tax law in 2003 may cause a shift back to dividends.
Measures of Dividend Policy

- **Dividend Payout:**
  - measures the percentage of earnings that the company pays in dividends
  - \( \text{Dividends} / \text{Earnings} \)

- **Dividend Yield:**
  - measures the return that an investor can make from dividends alone
  - \( \text{Dividends} / \text{Stock Price} \)
Dividend Payout Ratios: January 2005

Payout Ratio: US companies in January 2005

Aswath Damodaran
Dividend Yields in the United States: January 2005

Dividend Yields: US companies in January 2005

5362 companies paid no dividends in 2004
1729 companies paid dividends
Three Schools Of Thought On Dividends

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

2. If dividends have a tax disadvantage,
   - **Dividends are bad, and increasing dividends will reduce value**

3. If stockholders like dividends, or dividends operate as a signal of future prospects,
   - **Dividends are good, and increasing dividends will increase value**
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.
Why do firms pay dividends?

- The Miller-Modigliani Hypothesis: **Dividends do not affect value**
- Basis:
  - If a firm's investment policy (and hence cash flows) don't change, the value of the firm cannot change with dividend policy. If we ignore personal taxes, investors have to be indifferent to receiving either dividends or capital gains.
- Underlying Assumptions:
  - (a) There are no tax differences between dividends and capital gains.
  - (b) If companies pay too much in cash, they can issue new stock, with no flotation costs or signaling consequences, to replace this cash.
  - (c) If companies pay too little in dividends, they do not use the excess cash for bad projects or acquisitions.
The Classic Tax Response: Until 2003, dividends were taxed much more heavily than capital gains…
Gauging the tax effect by looking at Price Behavior on Ex-Dividend Date

Let $P_b =$ Price before the stock goes ex-dividend
$P_a =$ Price after the stock goes ex-dividend
$D =$ Dividends declared on stock
$t_o, t_{cg} =$ Taxes paid on ordinary income and capital gains respectively

\[
\begin{align*}
$P_b & \quad \text{Ex-Dividend Day} \quad $P_a
\end{align*}
\]
Cashflows from Selling around Ex-Dividend Day

- The cash flows from selling before then are:
  \[ P_b - (P_b - P) t_{cg} \]

- The cash flows from selling after the ex-dividend day are:
  \[ P_a - (P_a - P) t_{cg} + D(1-t_o) \]

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

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

Moving the variables around, we arrive at the following:
Price Change, Dividends and Tax Rates

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

If

- \( P_b - P_a = D \) then \( t_o = t_{cg} \)
- \( P_b - P_a < D \) then \( t_o > t_{cg} \)
- \( P_b - P_a > D \) then \( t_o < t_{cg} \)
The Evidence on Ex-Dividend Day Behavior

<table>
<thead>
<tr>
<th>Year</th>
<th>Ordinary Income</th>
<th>Capital Gains</th>
<th>( \frac{P_b - P_a}{D} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1981</td>
<td>70 %</td>
<td>28 %</td>
<td>0.78 (1966-69)</td>
</tr>
<tr>
<td>1981-85</td>
<td>50 %</td>
<td>20 %</td>
<td>0.85</td>
</tr>
<tr>
<td>1986-1990</td>
<td>28 %</td>
<td>28 %</td>
<td>0.90</td>
</tr>
<tr>
<td>1991-1993</td>
<td>33 %</td>
<td>28 %</td>
<td>0.92</td>
</tr>
<tr>
<td>1994</td>
<td>39.6 %</td>
<td>28 %</td>
<td>0.90</td>
</tr>
</tbody>
</table>
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?
  - Invest in the stock for the long term
  - Sell short the day before the ex-dividend day, buy on the ex-dividend day
  - Buy just before the ex-dividend day, and sell after.
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* 0.90)
  - 3. Collect dividend on stock.

- Net profit = -50 million + 49.10 million + 1 million = $0.10 million
The wrong 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.

- **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. Consider the cost of issuing new stock:
The Cost of Raising Capital

Issuance Costs for Stocks and Bonds

<table>
<thead>
<tr>
<th>Size of Issue</th>
<th>Cost of Issuing bonds</th>
<th>Cost of Issuing Common Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $1 mil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1.0-1.9 mil</td>
<td>15.00%</td>
<td>22.00%</td>
</tr>
<tr>
<td>$2.0-4.9 mil</td>
<td>10.00%</td>
<td>17.00%</td>
</tr>
<tr>
<td>$5.0-$9.9 mil</td>
<td>5.00%</td>
<td>12.00%</td>
</tr>
<tr>
<td>$10-$19.9 mil</td>
<td>2.50%</td>
<td>9.00%</td>
</tr>
<tr>
<td>$20-$49.9 mil</td>
<td>1.25%</td>
<td>6.00%</td>
</tr>
<tr>
<td>$50 mil and over</td>
<td>0.625%</td>
<td>4.00%</td>
</tr>
</tbody>
</table>
Are firms perverse to pay dividends?
Evidence from Canadian Firms

<table>
<thead>
<tr>
<th>Company</th>
<th>Premium for Cash dividend over Stock 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><strong>Average</strong></td>
<td><strong>7.54%</strong></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
  - (a) Older investors were more likely to hold high dividend stocks and
  - (b) Poorer investors tended to hold high dividend stocks
Results from Regression: Clientele Effect

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Implies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.22%</td>
<td>Higher beta stocks pay lower dividends.</td>
</tr>
<tr>
<td>Beta Coefficient</td>
<td>-2.145</td>
<td>Firms with older investors pay higher dividends.</td>
</tr>
<tr>
<td>Age/100</td>
<td>3.131</td>
<td>Firms with wealthier investors pay lower dividends.</td>
</tr>
<tr>
<td>Income/1000</td>
<td>-3.726</td>
<td>If ordinary income is taxed at a higher rate than capital gains, the firm pays less dividends.</td>
</tr>
<tr>
<td>Differential Tax Rate</td>
<td>-2.849</td>
<td></td>
</tr>
</tbody>
</table>
Dividend Policy and Clientele

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?

- Courageously announce to your stockholders that you plan to cut dividends and invest in the new markets.
- Continue to pay the dividends that you used to, and defer investment in the new markets.
- Continue to pay the dividends that you used to, make the investments in the new markets, and issue new stock to cover the shortfall.
- Other
Increases in dividends are signals... of good news.
An Alternative Story...Dividends as Negative Signals

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>EARNINGS GROWTH RATES IN YEARS SURROUNDING FIRST-TIME DIVIDEND PAYMENTS BY 131 FIRMS IN THE PERIOD 1970 TO 1979*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Relative to Dividend Initiation</td>
<td>Number of Firms</td>
</tr>
<tr>
<td>4</td>
<td>130</td>
</tr>
<tr>
<td>3</td>
<td>129</td>
</tr>
<tr>
<td>2</td>
<td>128</td>
</tr>
<tr>
<td>1</td>
<td>131</td>
</tr>
<tr>
<td>0</td>
<td>130</td>
</tr>
<tr>
<td>1</td>
<td>130</td>
</tr>
<tr>
<td>2</td>
<td>130</td>
</tr>
<tr>
<td>3</td>
<td>128</td>
</tr>
</tbody>
</table>

* In our original research we compute earnings performance as earnings changes standardized by stock prices. Here we convert these values to earnings growth rates by assuming that the average price earnings ratio for the sample firms is ten.
** Significantly different from zero at the 10% level or lower.

<table>
<thead>
<tr>
<th>FIGURE 1</th>
<th>MEDIAN EARNINGS GROWTH RATES IN YEARS SURROUNDING FIRST-TIME DIVIDEND PAYMENTS</th>
</tr>
</thead>
</table>

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The Wealth Transfer Hypothesis

EXCESS RETURNS ON STRAIGHT BONDS AROUND DIVIDEND CHANGES

Day (0: Announcement date)