Dividend Policy

The $D_{\text{inV}} = f(I, F, D)$

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Dividend decision

- Payout rate = Dividends/Earnings or DPS/EPS
  - What fraction of profits should be paid out and what fraction should be retained
- Stock splits and stock dividends

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Trade-off

- Net income or profits can be either paid out as dividends or retained and plowed back into the company
- Higher dividends are normally desired by most stockholders
- Higher retained earnings are normally desired by firm’s management ($k_d > k_c$)
- Strike a balance between the two
To retain or to pay out?

\[
payout*rate = \frac{dividends}{earnings} \cdot \frac{DPS}{EPS}
\]

\[
retention*rate = \frac{retained*earnings}{earnings} = (1 - payout*rate)
\]

Which is the decision variable and which is the residual?

Does a firm decide how much to pay out and retain whatever is left over or does it decide how much to retain and pay out any residual (implied in our cost of capital problems)?

This is the so-called "residual theory" of dividends.

Residual Theory

- DPS is a leftover or a residual
- First decide how much to retain
- Invest in all projects with NPV=0 or IRR = k
- Finance with optimal capital structure
- Finance equity with RE until exhausted
- Then switch to CS for equity
- Maybe pay out any earnings left over

Residual Theory example

**Given:** Net Income = 1,000,000

- Optimal weights: \( \frac{debt}{assets} = 40\% \) and \( \frac{equity}{assets} = 60\% \)

- Investments total $800,000
  - Raise 320,000 with debt and 480,000 with equity (all RE)
  - Dividend = 1,000,000 - 480,000 = 520,000

- Investments total $1,500,000
  - Raise 600,000 with debt and 900,000 with equity
  - Dividend = 1,000,000 - 900,000 = 100,000

- Investments total $5,000,000
  - Raise 2,000,000 with debt and 3,000,000 with equity
  - Dividend = 0 (new common stock = 2,000,000)
Irrelevancy of dividends?

- Residual theory suggests that dividend policy is irrelevant
- Investors are indifferent between dividends and capital gains
  - Retain if NPV ≥ 0 and capital gains
  - Pay out if NPV < 0 and dividend income

Two Nobel Prize Winners

- Modigliani and Miller (M&M)
  - Dividend policy is irrelevant
  - Only I matters in \( V_{\text{firm}} = f(I, F, D) \)
- Too complicated for a first semester course
- It is the assets of the firm that generate the stream of income – how that stream is distributed (dividends or capital gains) is irrelevant

Why dividends do matter

- Resolution of uncertainty
  - “bird-in-the-hand”
- Informational content
  - Concrete evidence as to how well firm is doing
  - Increase dividends even as earnings are falling
- Preference for current income
  - “Widows and orphans”
  - Don’t have to sell when stocks are temporarily depressed
- Market imperfections
  - Tax system historically favors capital gains and retention
  - Under-pricing and flotation costs (\( k_i < k_e \)) favors retention
Balance

- Firms try to strike a balance between the desirability of retained earnings as a relatively cheap source of equity funds and stockholders' desire for high dividends
- Typical payout rate is 40 to 60% per year

Stability

- Firms strive for stability, not of the payout rate, but of the dollar amount of the dividend
- Increase dividends as earnings increase but only after a lag
- "Wait-and-see" attitude – do not want to have to cut the dividend should earnings decline – big negative effect on stock price
- Stability has a positive effect on stock price

"Wait-and-See"

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Lintner Model

\[ \Delta D_t = a + b(r_E - D_{t-1}) \]
where:
\[ \Delta D_t = \text{change in the dividend} \]
\[ a = \text{reluctance to cut the dividend (} a > 0 \text{)} \]
\[ b = \text{speed of adjustment coefficient (} 0 < b < 1 \text{)} \]
\[ r = \text{target payout rate} \]
\[ E_t = \text{current EPS} \]
\[ D_{t-1} = \text{previous period dividend} \]

Assume: \( a = 0.5, b = 7, E_t = 5.00, r = 5, D_{t-1} = 2.00 \)
\[ \Delta D_t = (0.5 + 7)(5.00) - 2.00 = 0.40 \]

Why is stability important?

• Informational content – bolsters market's confidence
• Predictable current income
• Legal lists
  – Adds to stock’s marketability since institutional investors can now add it to their portfolios
• Extra dividend – GM – good model year
  – In addition to smaller, regular quarterly dividend

Stock dividends – stock splits

• Both represent payment of additional shares to stockholders but no money
• Proportional ownership is unchanged
• Usually done for psychological reasons
Stock dividend

• Recapitalization of the firm→ funds are transferred from retained earnings account to the common stock and capital surplus accounts
• After a 5% stock dividend, a stockholder with 100 shares will have 105 shares but each share is worth less
• Often the cash dividend is maintained

Stock split

• Brings about a big decrease in price of the stock to put it in a more favorable trading range – could have a psychological effect on price
• Recently Lucent had negative split to raise its price over a $1.00 to avoid being NYSE delisted
• Par value is split proportionally but ownership is unchanged
• Before: own 100 shares @ $200
• After a 4:1 split: own 400 shares @ $50
• EPS, DPS, terms of convertible bonds adjust

CONGRATULATIONS

• GOOD LUCK ON THE FINAL EXAM!
• ENJOY THE REST OF YOUR SUMMER!