

Dividend Policy

The D in $V_{firm} = f(I, F, D)$

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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 ($k_n > k_e$)
- Strike a balance between the two

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To retain or to pay out?

$$\text{payout rate} = \frac{\text{dividends}}{\text{earnings}} = \frac{\text{DPS}}{\text{EPS}}$$

$$\text{retention rate} = \frac{\text{retained earnings}}{\text{earnings}} = (1 - \text{payout rate})$$

Which is the decision variable and which is the residual?
Does 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

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Residual Theory

- DPS is a left-over 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

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Residual Theory example

Given : Net Income = 1,000,000

Optimal weights : $\frac{\text{debt}}{\text{assets}} = 40\%$ and $\frac{\text{equity}}{\text{assets}} = 60\%$

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)

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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

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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

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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 ($k_p > k_c$) favors retention

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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

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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

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"Wait and See"

Period	EPS	DPS
1	2.00	1.00
2	1.90	1.00
3	2.30	1.10
4	2.50	1.18
5	2.80	1.31
6	2.45	1.40
7	2.50	1.42
8	2.95	1.50
9	3.23	1.56
10	3.00	1.60

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Lintner Model

$\Delta D_t = a + b(rE_t - D_{t-1})$ where:

ΔD_t = change in the dividend

a = reluctance to cut the dividend ($a > 0$)

b = speed of adjustment coefficient ($0 < b < 1$)

r = target payout rate

E_t = current EPS

D_{t-1} = previous period's dividend

Assume $a = .05$, $b = .7$, $E_t = 5.00$, $r = .5$, $D_{t-1} = 2.00$

$\Delta D_t = .05 + .7[.5(5.00) - 2.00] = \0.40

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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

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Stock dividends – stock splits

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

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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

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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

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CONGRATULATIONS

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

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