Dividend Policy
Chapter 16

If all the economists in the world were laid end to end, they would never reach a conclusion.
-George Bernard Shaw

What is the “Dividend Policy” Question
Often mixed up with other financing/investment decisions
• Dividends as a by-product of the capital budgeting decision
• Dividends as a by-product of the borrowing decision

The precise question:
What is the effect of a change in cash dividends paid, given the firm’s capital budgeting and borrowing decisions?

But, if capital budgeting and borrowing decisions are fixed, how do we get the cash to increase dividends?
By issuing stock.
The Dividend Policy Question

The tradeoff: Retaining earnings vs. Paying out cash dividends and issuing new shares

Another way to see the tradeoff is to recognize that “sources” and “uses” of cash in any period must equal each other:

- What are the firm’s sources of cash?
  - Net earnings from the firm’s operations (X)
  - Proceeds from new security issues (F)

- What are the firm’s uses of cash?
  - Dividends paid to shareholders (D)
  - Outlays from capital budgeting decisions (I)

- Sources = Uses implies
  \[ X + F = D + I \]

If borrowing/investment decisions are fixed, how do we change dividends?

The irrelevance of dividend policy:

An example

Case I: No new financing:
Assume for a particular firm:
1. Net earnings from operations expected to be $1200 per year in perpetuity (X=1200).
2. Investment outlays for capital budgeting projects expected to be $200 per year in perpetuity (I=200).
3. The appropriate discount rate is 10 percent.
4. There are 1000 common shares outstanding.
Applying the “free cash flow” valuation model, what is the value of the firm and the price per share?

[Note: Free cash flow is expected to be $1000 (1200-200) per period in perpetuity]

Firm value =

What is the total dividend paid and the dividend per share?

Sources = Uses

\[ X + F = I + D \]

\[ 1200 + 0 = 200 + 1000 \]

What does the future stream of dividends look like?

Case II: Firm issues $200 of new stock (at t=1):

What will be the total dividend paid at t=1?

Sources = Uses

\[ X + F = I + D \]

\[ 1200 + 200 = 200 + \]

What will be the dividend per share to old shareholders at t=1? (Note: new shareholders don’t receive first dividend until t=2.)

What happens to price per share and what does the future stream of dividends look like?

To answer this we need to know:

• How many new shares were issued (\( m_1 \)) and

• The price at which new shares were issued (\( p_1 \))
Calculating share price and number of shares

We can represent the total proceeds from the issue as:

\[ 200 = m_1 p_1 \]  

(1)

The value of the firm at t=1 (\( V_1 \)) can be expressed as:

\[ V_1 = n_1 p_1 = (n_0 + m_1) p_1 \]  

(2)

where \( n_0 \) and \( n_1 \) are the shares outstanding at t=0 and t=1, respectively.

Recognizing that the value of the firm at time 1 is \( V_1 = $10,000 \) and that \( n_0 = 1000 \), we can rewrite (2) as

\[ V_1 = (1000 + m_1) p_1 = 1000 p_1 + m_1 p_1 \]

Substituting for \( m_1 p_1 \) from expression (1) yields:

\[ 1000 p_1 + 200 = 10,000 \]

implying that

\[ p_1 = $9.80 \] and \( m_1 = 20.41 \) new shares

So, what will the future stream of dividends look like?

Dividend per share = Total dividend / no. of shares

= 

Do new investors pay the right price?

Price = 

What is the effect of the increased dividend on the wealth of existing (old) shareholders?

Increase in dividend offset the decline in share price so that there is no change in wealth

What is the return to old shareholders?

Return = \( (d_{t1} + p_{t1} - p_{t0}) / p_{t0} \)
Are old shareholders indifferent between cases I and II?

**Consider an investor who holds 100 shares:**

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NPV = 20 - (2 / 0.10) = 0 ; no change in wealth.

Both streams have the same present value, but there is a *difference in timing*. Investors may prefer one time pattern to the other.

*Suppose the firm did not increase the current dividend* (financed by equity issue). *How could our investor achieve the stream of cash flows associated with case II?*

**Create a “homemade dividend”**

*How can investor achieve the pattern associated with case I, if the firm adopts case II?*

**Undo the dividend**

*If it is costly for investors to make handmade dividends (or undo dividends) then it may pay firms to offer different time patterns of payouts; so dividend policy may matter.*

BUT, ... (to be discussed later.)
Share repurchases are the same as dividends

Use $1000 to repurchase shares rather than pay dividend:
This implies that $m_1p_1 = -1000$

Sources = Uses

\[ X + F = I + D \]

\[ 1200 -1000 = 200 + 0 \]

Firm value can be expressed as:

\[ V_1 = (1000 + m_1)p_1 = 10,000 \]

\[ = 1000p_1 + m_1p_1 = 10,000 \]

Substituting for $m_1p_1$ and solving yields:

$P_1 = $11.00 and $m_1 = -90.91$ (90.91 shares are repurchased)

What does the future stream of dividends look like?

$1000/909.09 = 1.10$ per share

What is the effect on shareholder wealth?

Consider an investor who holds 100 shares:

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NPV = -100 + (10 / 0.10) = 0 ; no change in wealth.

How can you “undo” a repurchase?

How can you do a homemade repurchase?
Relax Perfect World Assumptions

1. Uncertainty and the case for larger dividends (rightists)
   - Bird in the hand argument
   - Bird in the hand fallacy
2. Taxes ... favor lower dividends
   - Tax on capital gains less than tax on dividend
3. Allowing for transactions costs
   - Floatation costs of new equity
     - lower optimal payout, but ...
     - issuance process may have “monitoring” benefits
   - Investor transactions costs
     - Makes homemade dividends costly. Therefore, it may be cheaper for firms to create the preferred policy.
     - This leads to a “clientele effect.”
   BUT, ONE CLIENTELE IS AS GOOD AS ANOTHER.

The Clientele Story (middle-of-the-road party)

Suppose
   90% of investors prefer a high dividend payout
   10% of investors prefer a low dividend payout
but...
   50% of firms offer a high dividend payout
   50% of firms offer a low dividend payout

Can any firms increase their value by changing their dividend payout policy?

What happens in equilibrium (when the dividend payout policies that firms offer satisfy investor preferences)?