Goals for Topic 8

• Calculate how much of earnings should be retained and how much returned to shareholders.
• Understand the channels for remitting earnings to shareholders, the differences between them, and when some are preferred to others.
• Begin to appreciate interactions between the payout decision, the investment decision, and the choice of capital structure.
Outline of Topics

• Dividends
  • Definitions and Mechanics
  • Implications in Perfect Markets
  • Implications in Imperfect Markets
• Share Repurchases
  • Implications in Perfect Markets
  • Implications in Imperfect Markets

Dividend Mechanics

• Definitions
  – A dividend is declared by the Board of Directors
    • (quarterly, monthly, semi-annual, special, liquidating)
  – Dividend yield = $DIV_t/P_t$
  – Payout ratio = $DIV_t/(after-tax profit)$
• Important Dates for Dividend Payments
  – Announcement Date
    • e.g., Nov 8; regular quarterly dividend of $.05/share
  – Ex-Dividend Date
    • four business days before record date;
    • the date shares start to trade with no dividend attached
  – Record Date
    • date at which list of qualified shareholders is made up
  – Payment Date
    • date checks sent to shareholders of record

Facts about Dividends

• The dividend yield on the S&P 500 is currently 1.7%, near an all-time low.
• This is partially because of low dividends by those who traditionally pay dividends
• … but also partially because the composition of publicly traded firms has shifted toward non-dividend-paying firms.
  – Low earnings
  – Strong investment opportunities (asset growth among non-payers is double that of payers)
  – Small size (dividend payers are about 10 times larger than non-dividend payers)
Fig 1. The number of CRSP firms in different dividend groups. The CRSP sample includes NYSE, AMEX, and NASDAQ securities with share codes of 10 or 11. A firm must have nonzero equity data (plan and share outstanding) for December of year t to be in the sample in that year. We exclude utilities (SIC codes 4900–4949) and financial firms (SIC codes 6000–6999). Firms pay dividends in year t, non-payers do not. The two subgroups of non-payers are firms that have never paid and former payers (firms that do not pay in year t but did pay in a previous year).

Fig 2. The percent of CRSP firms in different dividend groups. The CRSP sample includes NYSE, AMEX, and NASDAQ securities with share codes of 10 or 11. A firm must have nonzero equity data (plan and share outstanding) for December of year t to be in the sample in that year. We exclude utilities (SIC codes 4900–4949) and financial firms (SIC codes 6000–6999). Firms pay dividends in year t, non-payers do not. The two subgroups of non-payers are firms that have never paid and former payers (firms that do not pay in year t but did pay in a previous year).
Dividends in Perfect Markets

Example 1: Accounting for dividends

Suppose a firm has 100 shares of equity outstanding with market value balance:

Market Value Balance Sheet (no dividend)

<table>
<thead>
<tr>
<th>Cash</th>
<th>2,000</th>
<th>Debt</th>
<th>1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Assets</td>
<td>5,000</td>
<td>Equity</td>
<td>6,000</td>
</tr>
<tr>
<td>Assets</td>
<td>7,000</td>
<td>L&amp;OE</td>
<td>7,000</td>
</tr>
</tbody>
</table>

The per share value of equity is

Suppose instead that the firm declares a $5.00 dividend to be paid out of existing cash.

The firm’s market value balance sheet would look like:

Market Value Balance Sheet ($5.00 dividend)

<table>
<thead>
<tr>
<th>Cash</th>
<th>1,500</th>
<th>Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Assets</td>
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</tr>
<tr>
<td>Assets</td>
<td>6,500</td>
<td>L&amp;OE</td>
</tr>
</tbody>
</table>

The value per share is:

Critical question: In a perfect market, would investors be willing to pay more for the firm’s claims under the no-dividend policy than under the $5 policy?
Roughly speaking the answer should be no because either way:

The answer is clearly “no” if dividend payments are financed by issuing new equity rather than paid out of existing cash:

Example 2:
Financing a Dividend with an Equity Issue

Assume the no-dividend case is the same as above.

If the firm does pay a dividend, it raises $500 by issuing “n” new shares at a price of “P” per share:
After the dividend is paid, the firm’s market value balance sheet looks like:

**Market Value Balance Sheet ($5.00 dividend)**

<table>
<thead>
<tr>
<th></th>
<th>Cash 2,000</th>
<th>Debt 1,000</th>
<th>Fixed Assets 5,000</th>
<th>Old Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td>7,000</td>
<td>L&amp; OE</td>
<td></td>
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</tbody>
</table>

The old and new equity holders share a claim on $6,000 (= 7,000 - 1,000) net assets:

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**Is the value of the firm’s claims affected by whether the firm pays dividends or not?**

- Under both policies, the aggregate value of debt is $1,000.
- Under the no-dividend policy, each initial share is worth $60.00
- Under the $5-dividend policy, each initial share is worth $55.00 plus a $5.00 dividend.

*Notice that under the assumption of a perfect market the new equity holders give up $500 cash in exchange for claims that are worth exactly $500; no value is gained or lost by financing the dividend with an equity issue.*
Example 3: A do-it-yourself dividend

Suppose the firm has chosen the no-dividend policy but you want a $5.00 dividend.

Should you pay more for a firm that pays dividends?

No, you can always “manufacture” a dividend on your own:

• Sell 5/60 of your holdings in the firm
  • if you own 60 shares, sell 5 shares
  • this generates 5 x $60 = $300 cash

• The cash inflow from this sale is $5.00 per share initially owned leaving you with remaining shares with $55.00 per share initially owned
  • $300 generated/60 shares = $5 / share
  • leaving ($60 x 60) – $300 = $3300/60 = $55/ original share owned

Exactly as if a $5 dividend had been paid!
Similarly if the firm paid a $5.00 dividend that you did not want, you can “manufacture” the no-dividend policy by re-investing your dividend in the firm’s existing shares outstanding.

**Bottom line:** A dividend financed by an equity issue does not affect firm value in a perfect market.

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But in an imperfect world...

Companies and investors care about dividend policy

Consider when Intel initiated dividend payments in 1992:

$0.10 dividend ($0.40 per year) on $63.75 stock price (.63% dividend yield)
Quotes from the *NY Times* article, "Intel to Pay a Dividend, its First Ever"

• "Analysts welcome the dividend ... make the shares less volatile and broaden investor base, because some mutual funds will only invest in stocks that pay dividends"

• "...veiled indicator that firm expects record earnings..."

• "...company's desire to be considered a more mature, though still growing, concern..."

• "When a high tech company starts paying a dividend, that indicates the company believes shareholders can make higher returns elsewhere...If I were an Intel shareholder, I'd rather they put my 40 cents back into innovation."

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**Quotes from the WSJ article (January 17, 2003):**

"*Microsoft, Awash in Cash, Declares Its First Dividend*"

• “initial annual dividend of 16 cents a share....” “the dividend yield works out to only 0.29%, far below the 1.671% average yield on the companies in Standard & Poor’s 500 stock index.”

• “the move highlights the evolution in Microsoft’s business from a fast-growing tech startup to a more mature business....”

• “Microsoft’s board has regularly considered paying a dividend, but decided to take the plunge... (citing) Microsoft’s continuing financial strength...."

• " it now appears able to fund extensive R&D as well as a payout to shareholders.”
WSJ article, February 4, 2003:

“Goodyear Eliminates Dividend, Helping Push Shares Down 17%”

- Dividend drop from 12 cents a share to zero.
- “facing rising costs and pressing financial obligations, eliminated its quarterly dividend as it struggles to conserve cash and pay off debt.”
- “… more cost cutting is needed and that Goodyear… may have to sell assets.”

How do we reconcile these observations?

In a perfect market, dividends should not affect value.

In the data, dividend announcements appear to affect stock prices.

There must be a market imperfection at work… what is it?
Dividends in Imperfect Markets

- Evidence:
  - Managers seem reluctant to decrease dividends, even when earnings drop
  - Managers only increase dividends slowly, even when earnings go up rapidly

- Dividends as a Signal
  - Market prices react to unexpected increases (decreases) in dividends
  - Management is concerned about dividend policy because of the effect it has on stock price

Dividends with Asymmetric Information

- If I think the market is undervaluing my shares, why don't I just say so?
- What makes the signal credible? (i.e., what is to keep bad firms from mimicking good firms?)
- Is a dividend a credible signal?
Dividends with Agency Costs

• **Dividends may be a way to avoid agency costs**
  – Differences in opportunities for investment by the firm compared to the shareholder
    • if the firm has lots of projects conserve cash
    • if not, it may be better to pay it out
      – Since costly to monitor how managers spend money, better to get it out of the firm if not clearly needed.
      – Management may be resistant to the idea that they should not keep these resources under their control.
• Paying a regular dividend pre-commits management to a steady payment of cash to shareholders.

Other Reasons Dividends Might “Matter” for Shareholder Value

• Legal limitations on some entities
• Clientele effects due to:
  – taxes
  – transactions costs

_BUT SOME OFTEN STATED REASONS MAKE LESS SENSE..._
I. Dividends - Other Reasons Dividends Can Matter

The Bird in the Hand Fallacy:

– A sure dollar of dividends is superior to an uncertain capital gain with a present value of $1, right?
– Not the right comparison: The tradeoff is not a dollar now vs. a dollar later;
– It is a dollar now (in the form of a dividend, with its consequent $1 drop in stock price) vs. a dollar now (in the form of no $1 drop in stock price and not getting the dividend).

A Closer Look at Taxes and Payout Policy

• A general approach to analyzing firm policy:
  – Consider the alternatives available to the firm and investors.
  – Consider the costs incurred by the firm and investors.
  – When a party has a comparative advantage along any of these dimensions, corporate financial policy is relevant.
CHANGES IN THE TAX CODE THAT AFFECT PAYOUT POLICY

• Features of tax code: pre-1986 Tax Reform Act
  – Ordinary personal tax rates progressive up to 50% maximum marginal rate: in 1970's maximum rate was 70%
  – Dividends and interest taxed as ordinary income (for the most part)
  – Long term capital gains taxed at 40% of the rate on ordinary income (maximum rate = 50%(.40) = 20%).
  – Corporate taxes progressive up to 46%-48% maximum marginal tax rate.

• Features of tax code post-1986 TRA
  – Maximum ordinary tax rate = 28%; 33% if you were in surcharge income range
  – Long term capital gains taxed the same as ordinary income
  – Corporate tax rate up to 34%
• **Features of the tax code pre - GW Bush**
  – Maximum ordinary tax rate = 39.6% (36% + 10% surcharge)
  – Capital gains taxed at 28% maximum
  – Corporate tax rate up to 35%; AMT
  – 70% dividend exclusion for corporations

• **The J&GTRR Act of 2003**
  – Maximum ordinary tax rate = 35% (top 4 brackets each fell by at least 2% points)
  – Capital gains taxed at 15% maximum
  – Dividends taxed at 15% maximum
  – … with a maze of phase-ins and phase-outs.

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**THE COMPLEXITY OF THE TAX CODE CREATES TAX CLIENTELES: CLIENTELE THEORY**

• High tax-bracket investors may be drawn to low or no dividend paying stocks. Low bracket investors may be drawn to high dividend paying stocks.

• Corporations are special clientele:
  – dividend exclusion: if taxed at the 34% rate then effective tax rate on dividend income is .30(34%) = 10.2%. An equal dollar capital gain would be taxed at 34%

• There is substantial evidence of the importance of this clientele. For example, prior to the 1980's the practice of dividend capture arbitrage was widespread using high dividend stocks (see example below).
Example: The Tax Advantage of Capital Gains

• You own ten shares of stock in the firm we analyzed earlier.
• You purchased the shares a year ago at $40 each (i.e., your tax “basis” is $40 per share).
• The firm pays no dividends.

<table>
<thead>
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<th>Market Value Balance Sheet (no dividend)</th>
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<tbody>
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<td>Cash 2,000   Debt 1,000</td>
</tr>
<tr>
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<tr>
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You want to pull $60.00 out of this investment.

Both capital gains and dividends are taxed at 15%.

*Are you better off with a dividend payment or with liquidating shares?*

Case 1: firm pays a $6.00 dividend.

You pay taxes of 15% on $6.00 per share for 10 shares (i.e., taxes are $9.00), and you are left with 10 shares each worth $54.00.

Your net position after tax is:

- cash inflow of $51.00 (= 60.00 – 9.00)
- securities worth $540.00
Case 2: sell one share.

The gain on the sale of one share is $20.00 (= 60 - 40);
The tax on this gain is $20 x .15 = $3.00

Your net position after tax is:
  - cash inflow of $57.00 (= 60.00 – 3.00)
  - securities worth 9 x 60.00 = $540.00

Manufacturing the payout on your own saves you $9.00 - $3.00 = $6.00 in taxes compared to receiving $60.00 as a dividend.

But note that… these savings are at least in part temporary. If you were to close out your entire position at the same time, there would be no savings:

if dividend paid and position closed out, the tax is:
  .15(10)(54-40) = $21.00

if repurchase made and position closed out, the tax is:
  .15(9)(60-40) = $27.00

so total taxes are
  9.00 + 21.00 = 30.00 with the dividend
  3.00 + 27.00 = 30.00 with the share sale

The saving equals the time value of paying taxes later rather than earlier when cash is received in the form of a capital gain….
Example: Corporate and Personal Taxes

- We just concluded that taking a capital gain is preferred to taking a dividend.
- But this ignores personal taxes.
- Suppose that the corporate tax rate is 35%.
- Suppose that the firm does not pay the $6.00 dividend, but puts the money in T-Bills for 5 years earning 6%, and then distributes the accumulated amount as a dividend:

\[
\text{After-Tax Payout at Time 5 per share} = (1-0.15) \times 6 \times (1+0.06(1-.35))^5 = $6.18
\]

Alternatively, the firm could pay a $6.00 dividend and you could invest in 5-year T-Bills at 10%. At the end of 5 years you would have

\[
\text{After-Tax Value at Time 5 per share} = (1-0.15) \times 6 \times (1+0.06(1-0.28))^5 = $6.30
\]

What would seem like a neutral (i.e., zero NPV) investment on the part of the firm is worse than paying the cash out as a dividend because individuals can get a higher after-tax return on this particular investment on their own.
Example: Dividend Capture by Corporations

- Before the IRS changed the rules, corporations made large profits by exploiting their dividend exclusion.

- **Strategy**: Buy stocks right before dividend and get dividend. Then resell stock at a loss. Write off capital loss.

- Suppose Price before = $100; Dividend = $4; Price after = $96; Corporate tax rate = 34% (70% dividend exclusion)

  Profit = -$100 + $4(1 - .34(.3)) + $96 - .34($96 - $100) = $.952

- Tax arbitrage! Alas, the IRS got wise and changed the holding period requirements....

Dividend Summary

- Tax effects are confusing (but worthwhile to consider, especially on your personal account).

- The comfort of efficient markets: If there was a substantial amount of money to be made by cutting or increasing dividends, most firms would have already exploited it.

- Therefore, it is generally safe to assume that your firm’s fortunes will be neither made nor broken by its choice of dividend policy.
• Nevertheless, considerations in choosing dividend policy include:
  – Availability of cash for positive NPV projects (i.e., cost of outside versus internal financing)
  – Signaling
  – Agency Costs
  – Transaction costs and the possibility that you are catering to a specific tax clientele

• Repurchasing shares is an alternative means for firms to distribute cash.

• It appears that repurchases may dominate dividends as a lower cost way to disperse money.
Share Repurchases

- The percentage repurchasing shares has increased significantly over time, but dividends are still dominant
  - Repurchasing firms also tend to be dividend-payers
- We will look at
  - the mechanics of share repurchases
  - tax implications of repurchases
  - the role of repurchases as a signal of firm value
Share Repurchases in perfect markets

Repurchases do not affect value in a perfect market.

• Example: Suppose a firm has 100 shares of equity outstanding.

**Market Value Balance Sheet**

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<td>Assets</td>
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<td>L&amp; OE</td>
<td>7,000</td>
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</tbody>
</table>

• The value per share is $6,000/100 = $60.00.

• Suppose the firm wants to distribute $500.

The firm can repurchase “n” shares at a price “P” per share. After the repurchase, the firm’s market value balance sheet looks like:

**Market Value Balance Sheet after Repurchase**

<table>
<thead>
<tr>
<th>Cash</th>
<th>1,500</th>
<th>Debt</th>
<th>1,000</th>
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This means that $nP = 500 and $P = 5500/(100 - n)

or, $P = $60.00 and n = 8.33 shares.

**Conclusion:** As an investor, whether your shares are repurchased or not is a matter of indifference because, either way, you have cash or a security worth $60.00.
The difference between a repurchase and a dividend in perfect markets is

- When a dividend is paid share prices drop and shareholders have the dividend

- When a repurchase is made, the share price stays the same and the number of shares outstanding drops.

Repurchases in Imperfect Markets: Asymmetric Information

- We saw that increasing dividends may serve as a signal that a firm is good, as evidenced by the price increase at the announcement of a dividend.
- Can a repurchase serve the same role?
Repurchases in Imperfect Markets: Taxes

- The tax treatment of income from a repurchase is often different than that for dividends.
- Can be taxed as a capital gain (IRS sec. 302), but treated as a dividend if either
  - Done in such a way as to make the distribution "equivalent" to a dividend distribution
  - If pro-rata among all shareholders (80% safe harbour rule: if an individual’s stake after the repurchase is less than 80% of his stake prior to the repurchase, then will not be taxed as a dividend.)
- Always a capital gain if the shareholder is bought out entirely.

Repurchase Methods

1. Open Market
   - the most common method
   - generally small dollar amount
   - can occur over several months or even years
   - regulated by SEC (can't repo more than 25% of traded volume in last 4 weeks on any day)
   - need not disclose repurchase program, but must comply with antifraud provisions in the SEC Act of '34

2. Privately Negotiated Transactions
   - infrequent
   - used to help large shareholders get out (saves transactions costs)
   - used in take-over defenses
(3) Tender Offer
- used for large buybacks (avg. 15% of outstanding shares)
- firm specifies number of shares it wants to purchase, offer price, and expiration date of offer
- offer usually above market price by about 5%
- goes pro-rata if oversubscribed (may cancel if undersubscribed)
- cheap for tendering shareholders
- frequently directors and officers can't participate

(4) Transferable put rights
- newer innovation (invented by Morgan Stanley in 1980s)
- firm gives shareholders a free put option for a fraction of their shares (e.g., 10%) that they can exercise, hold or sell
- provides tax benefits not available in more conventional transactions (choice between ordinary income and capital gains treatment)

(5) Dutch Auction
- also relatively new (designed by Alan Greenberg at Bear Stearns and first used in 1981)
- firm specifies:
  • acceptable price range,
  • number shares sought,
  • expiration date
- shareholders can:
  • tender none
  • tender some at one or multiple prices
  • tender all
- firm accepts offers until all shares sought are obtained. Buys all at market-clearing price. (By law must treat all shareholders equally).
- auction is likely to save money for firm relative to traditional tender offer because don't have to guess price. Also, auction structure induces shareholders to reveal their true valuation since offer price does not affect price received.
Benefits of Repurchases

(1) Use the lower effective tax rate on capital gains.

(2) Reduce the number of shares outstanding, which may reduce firm's transactions costs.

(3) More flexibility for shareholders (they only get cash if they want it).

(4) Takeover defense: incumbent management can concentrate ownership by not tendering, or by buying out hostile shareholders.

Problems with Repurchases

(1) Perception of price manipulation by firm.

(2) Price impact of repurchase may cause firm to buy back shares at too high a price.

V. Summary

• Key Concepts
• Definitions
• Notation
Key Concepts

Dividend policy does not affect firm value, regardless of whether it is financed by cash or equity issue, in a perfect market.

In imperfect markets companies and investors care about dividend policy, due for example, to agency costs, signaling, taxation and/or clientele effects.

Share repurchases do not affect value in perfect markets. In imperfect markets, share repurchases may affect value, and in different ways than do dividends.

Definitions

Important dividend dates: the Announcement, Payment, Record, and Ex-dividend dates

Share repurchases are accomplished via the open market, privately-negotiated transactions, tender offer, transferable put rights or Dutch auction.
Next Time:

- Capital Structure - Does the structure of a firm’s financing affect its value or its decisions?

More on Repurchases as a Signal

We saw that increasing dividends serves as a signal that a firm is good, as evidenced by the price increase at the announcement of a dividend. Can a repurchase serve the same role?

The answer is yes—there are several stories to explain this.

The first is parallel to the explanation for dividends. If a firm repurchases shares but anticipates low future cashflows, the cost is that the firm will likely have to go to market later on and raise costly outside capital. Thus managers who do not predict strong future earnings will be reluctant to repurchase, and the repurchase will be a credible signal of the manager’s forecast.

Another reason that a repurchase is good news is that a manager acting in the interest of current shareholders has a strong incentive to repurchase when the firm appears to be undervalued (based on the managers partly private information).

Example: Why managers who believe their firm is undervalued are more likely to repurchase.

1000 shares outstanding.
Market price is $100/share.
Manager thinks price should be $120/share.
Say repurchases 100 shares at the current market price, so pays out
100 * $100 = $10,000
Remaining shareholders now have a claim to assets worth
1000 * $120 - $10,000 = $110,000
So manager thinks old shareholders now have a claim worth
$110,000/900 = $122.22 per share.

Now imagine instead that the manager believes the firm is overvalued at $100 a share, and thinks that $95 is a fair price.
This belief does not affect the market price, so again would pay out $10,000 to get 100 shares.
But now manager thinks claim of remaining shareholders is worth
1000 * $95 - $10,000 = $85,000
So manager thinks old shareholders now have a claim worth
$85,000/900 = $94.44 per share.

THIS ARGUMENT IS CONSISTENT WITH STUDIES SHOWING A PRICE RISE AT THE ANNOUNCEMENT OF A REPURCHASE.