



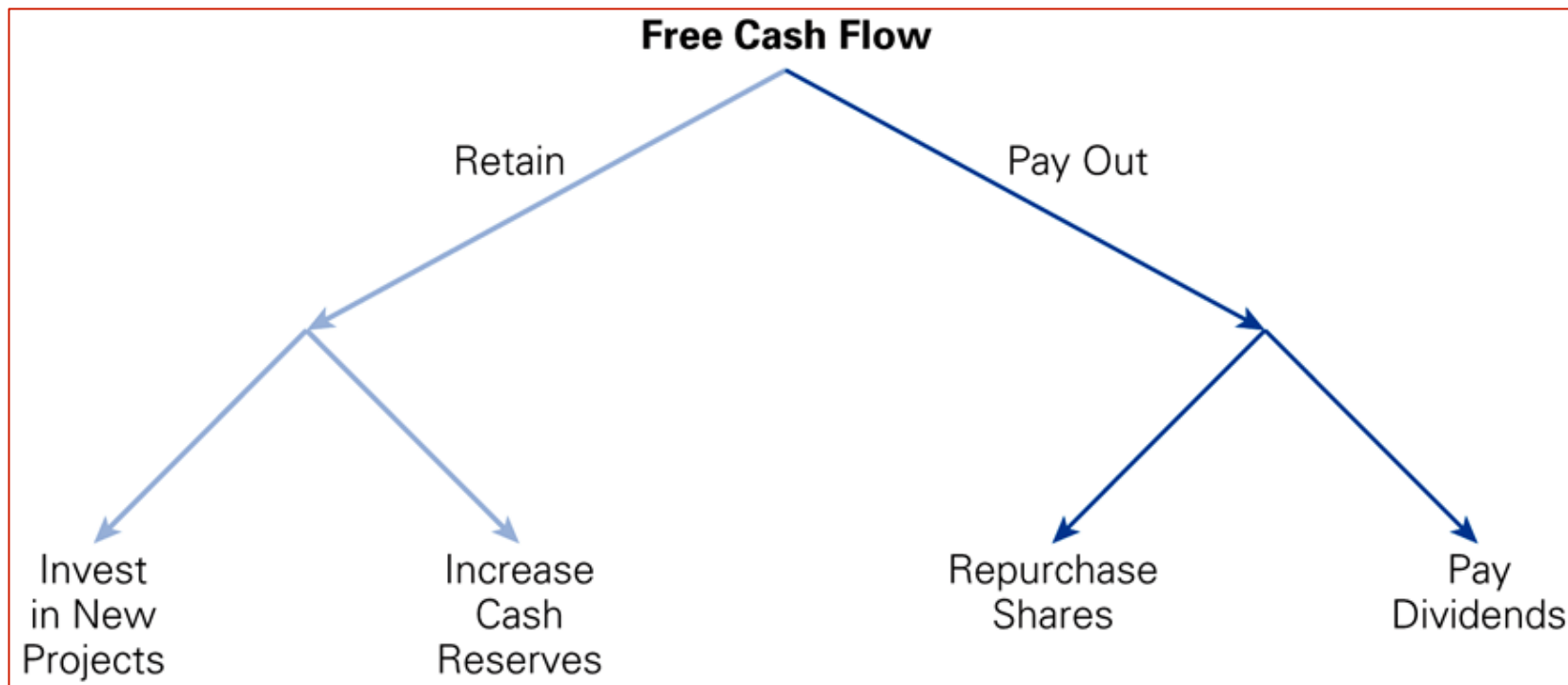
Payout Policy

Outline

- Cash Dividends: types and procedures;
- Stock Repurchases versus Cash Dividends:
 - Irrelevance in a perfect world
 - Homemade Dividends
 - Personal Taxes:
 - Advantage to Repurchases versus Dividends
- Distribute or Retain?
 - Personal Taxes
 - Issuance and Distress Costs
 - Agency costs of retaining cash
- Signaling with Payout Policy
- Other Types of Dividends: Stock Dividends, Splits, and Spin-ups.

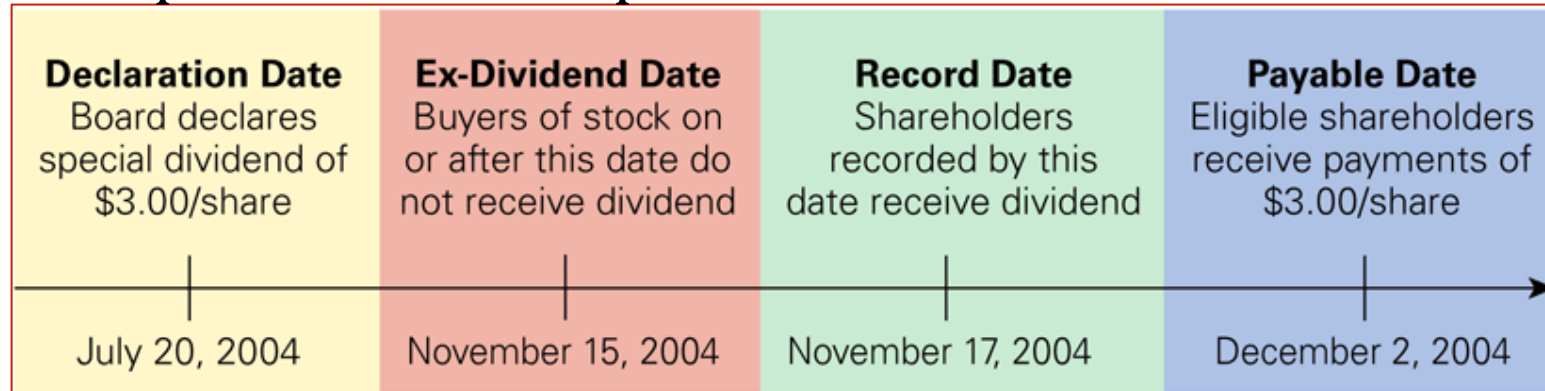
Payout Policy

The way a firm chooses between the alternative ways to distribute free cash flow to equity holders



Cash Dividends: procedure

Example: Microsoft's special dividend



Declaration Date: The date on which the board of directors authorizes the payment of a dividend.

Ex-Dividend Date: A date, two days prior to a dividend's record date, on or after which anyone buying the stock will not be eligible for the dividend.

Record Date: When a firm pays a dividend, only shareholders on record on this date receive the dividend.

Payable Date (Distribution Date): A date, generally within a month after the record date, on which a firm mails dividend checks to its registered stockholders.

Types of Dividends

- Many companies pay a **regular cash dividend**
 - Public companies often pay quarterly
 - Firms can also pay a **Special Dividend**: A one-time dividend payment a firm makes, which is usually much larger than a regular dividend
- Companies will often declare **stock dividends**
 - No cash leaves the firm
 - The firm increases the number of shares outstanding
- Some companies declare a **dividend in kind**
(e.g., Wrigley's Gum sends a box of chewing gum, Dundee Crematoria offers shareholders discounted cremations).
- **Return of Capital:**
 - When a firm, instead of paying dividends out of current earnings (or accumulated retained earnings), pays dividends from other sources, such as paid-in-capital or the liquidation of assets
- **Liquidating Dividend:**
 - A return of capital to shareholders from a business operation that is being terminated

Stock Repurchases

An alternative way to pay cash to investors is through a **share repurchase or buyback**. The firm uses cash to buy shares of its own outstanding stock.

- **Open Market Repurchase**

- When a firm repurchases shares by buying shares in the open market
- Open market share repurchases represent about 95% of all repurchase transactions.

- **Tender Offer**

- A public announcement of an offer to all existing security holders to buy back a specified amount of outstanding securities at a prespecified price (typically set at a 10%-20% premium to the current market price) over a prespecified period of time (usually about 20 days)
- If shareholders do not tender enough shares, the firm may cancel the offer and no buyback occurs.

- **Dutch Auction**

A share repurchase method in which the firm lists different prices at which it is prepared to buy shares, and shareholders in turn indicate how many shares they are willing to sell at each price. The firm then pays the lowest price at which it can buy back its desired number of shares

- **Targeted Repurchase**

When a firm purchases shares directly from a specific shareholder

- **Greenmail**

When a firm avoids a threat of takeover and removal of its management by a major shareholder by buying out the shareholder, often at a large premium over the current market price

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) -1

- Example:

- Consider Genron Corporation. The firm's board is meeting to decide how to **pay out \$20 million** in excess cash to shareholders.
- Genron has **no debt**, its equity cost of capital equals its **unlevered cost of capital of 12%**.

- The firm expects to **generate future free cash flows of \$48 million per year.**

$$\text{Enterprise Value} = PV(\text{Future FCF}) = \frac{\$48\text{million}}{0.12} = \$400\text{million}$$

Assets		Liabilities & Equity	
Cash	\$20 million	Debt	\$0 million
Assets	\$400 million	Equity	\$420 million
Total Assets	\$420 million	Total Debt & Equity	\$420 million

- The firm has **10 million shares outstanding** with current **stock price \$42**.

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) - 2

- **Payout Policy #1: Cash Dividend of \$20 million.**
 - This corresponds to a \$2 dividend per share.
- When a stock trades before the ex-dividend date, entitling anyone who buys the stock to the dividend, we talk about the cum-div price. The **cum-dividend price** of Genron will be:

$$P_{cum} = \text{Current Dividend} + PV(\text{Future Dividends}) = 2 + \frac{4.80}{0.12} = 2 + 40 = \$42$$

- After payment, the **ex-dividend price** is **\$40**:

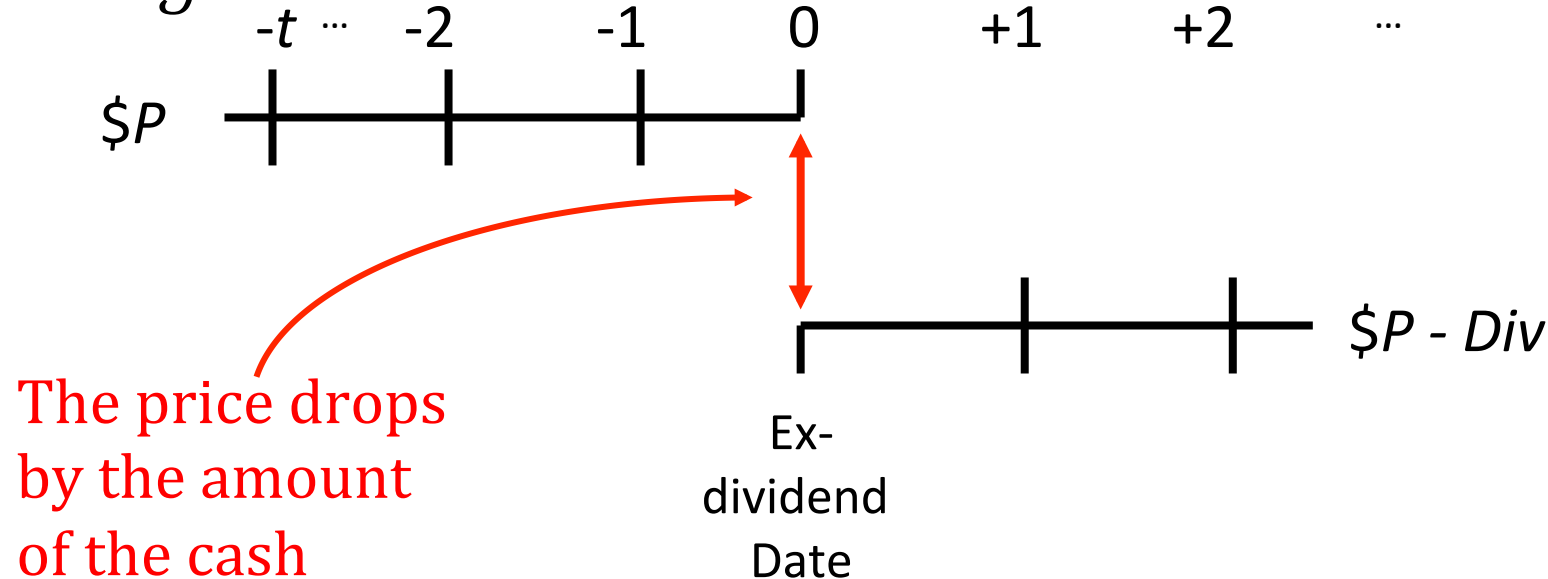
$$P_{ex} = PV(\text{Future Dividends}) = \frac{4.80}{0.12} = \$40$$

Assets		Liabilities & Equity	
Cash	\$0 million	Debt	\$0 million
Assets	\$400 million	Equity	\$400 million
Total Assets	\$400 million	Total Debt & Equity	\$400 million

- The **number of shares** is unchanged (**10million**).

Lessons: Price Behavior around Dividend Payments

In a perfect capital market, when a dividend is paid, the share price drops by the amount of the dividend when the stock begins to trade ex-dividend.



*Note: Taxes complicate things a bit.
Empirically, the price drop is less than the dividend and occurs within the first few minutes of the ex-date*

Clara Raposo

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) - 3

- **Payout Policy #2: Share Repurchase, spending \$20 million.**
 - With an initial share price of \$42, Genron **will repurchase:**

$$\frac{\$20\text{million}}{\$42} = 0.476 \text{ million shares.}$$

- This leaves the company with $10 - 0.476 = 9.524$ million shares **outstanding.**

Assets		Liabilities & Equity	
Cash	\$0 million	Debt	\$0 million
Assets	\$400 million	Equity	\$400 million
Total Assets	\$400 million	Total Debt & Equity	\$400 million

- In future years, the firm expects a **FCF of \$48 million, or \$48million/9.524million= \$5.04 per share**, which corresponds to the same **share price of \$42.**

$$P_{rep} = \frac{5.04}{0.12} = \$42$$

Lessons: Price Behavior around Stock Repurchases

In perfect capital markets, an open market share repurchase has no effect on the stock price, and the stock price is the same as the cum-dividend price if a dividend were paid instead.

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) - 4

- What would **investors prefer**? Payout Policy #1 or #2?
 - Investors should be indifferent. Consider an investor currently holding 2000 shares of Genron.
 - With the cash dividend, investors get:
 - $\$2 \times 2000 = \4000 in cash;
 - $\$40 \times 2000 = \$80,000$ in stock.
 - With the stock repurchase investors get:
 - $\$42 \times 2000 = \$84,000$ either in cash (if sold to firm) or in stock (if held to the stock).
 - If the investor is not happy with the amount of cash that she is making, she can sell or buy shares. We call this **Homemade Dividends**.

MM Homemade Dividends: Example

- Bernard Inc. is a \$44 stock about to pay a \$4 cash dividend
- John Investor owns 80 shares and prefers a \$6 dividend
- John's homemade dividend strategy:
 - Sell 4 shares on ex-dividend date

	Homemade dividend	\$6 Dividend
Cash from dividend	$\$4 \times 80 = \320	$\$6 \times 80 = \480
Cash from selling stock	$\$40 \times 4 = \160	\$0
Total cash	\$480	\$480
Value of stock holdings	$\$40 \times 76 = \$3,040$	$\$38 \times 80 = \$3,040$
Total Wealth	\$3,520	\$3,520

Lesson: Dividend Policy Irrelevance in a Perfect World (MM)

- *In perfect capital markets, investors are indifferent between the firm distributing funds via dividends or share repurchases. By reinvesting dividends or selling shares, they can replicate either payout method on their own.*

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) - 5

- **Payout Policy #3: High Dividend (Equity Issue)**

- In future years the **expected FCF is \$48 million**. Suppose Genron wants to pay an even larger dividend than \$2 per share right now, more in line with expected future cash flows.
- To be able to spend \$48 million right away, the firm would need to **raise \$28 million new equity** immediately.
- Given a current stock price of \$42, the firm would raise:

$$\frac{\$28\text{million}}{\$42} = 0.67\text{million shares.}$$
- The **number of shares** outstanding would raise to **10.67 million**.

Assets		Liabilities & Equity	
Cash	\$48 million	Debt	\$0 million
Assets	\$400 million	Equity	\$448 million
Total Assets	\$448 million	Total Debt & Equity	\$448 million

Cash Dividends or Stock Repurchases? Irrelevance in a Perfect world (MM) - 6

- The amount of **Dividend per share** each year would be:

$$\frac{\$48\text{million}}{10.67\text{million}} = \$4.50$$

- We can confirm the cum-dividend share price:

$$P_{cum} = \$4.50 + \frac{\$4.50}{0.12} = \$4.50 + \$37.50 = \$42$$

Assets		Liabilities & Equity	
Cash	\$0 million	Debt	\$0 million
Assets	\$400 million	Equity	\$400 million
Total Assets	\$400 million	Total Debt & Equity	\$400 million

- And indeed the **ex-dividend price per share** of \$400million/10.67million = \$37.50.

Lesson: Dividends and Investment Policy

In perfect capital markets, holding fixed the investment policy of a firm, the firm's choice of dividend policy is irrelevant and does not affect the initial share price.

The Tax Disadvantage of Dividends

Shareholders must pay taxes on the dividends they receive and they must also pay capital gains taxes when they sell their shares.

Dividends are typically taxed at a higher rate than capital gains. In fact, long-term investors can defer the capital gains tax forever by not selling.

Long-Term Capital
Gains Versus
Dividend Tax Rates
in the United
States, 1971–2009

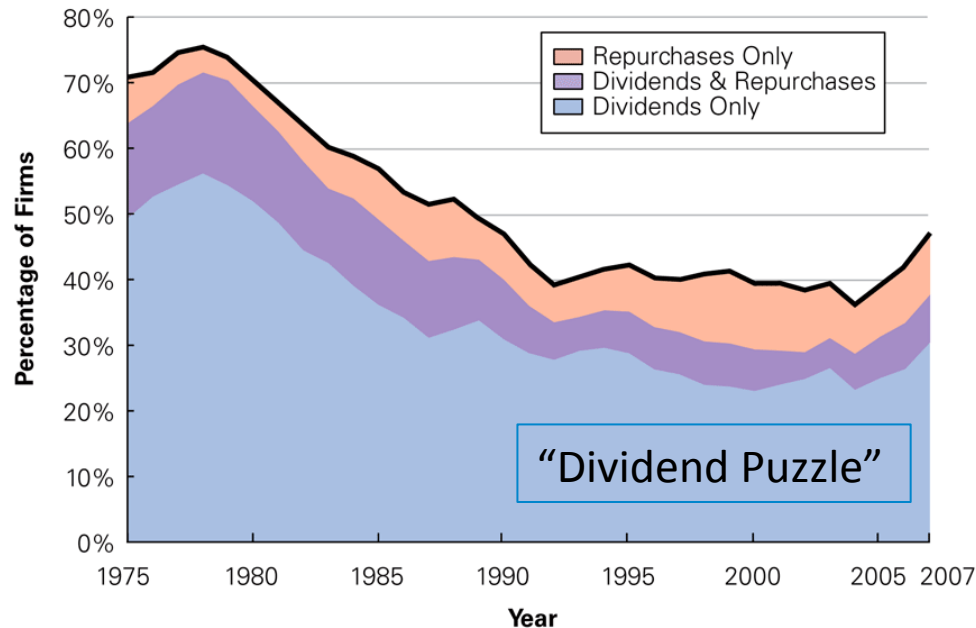
Year	Capital Gains	Dividends
1971–1978	35%	70%
1979–1981	28%	70%
1982–1986	20%	50%
1987	28%	39%
1988–1990	28%	28%
1991–1992	28%	31%
1993–1996	28%	40%
1997–2000	20%	40%
2001–2002	20%	39%
2003–*	15%	15%

The Tax Disadvantage of Dividends

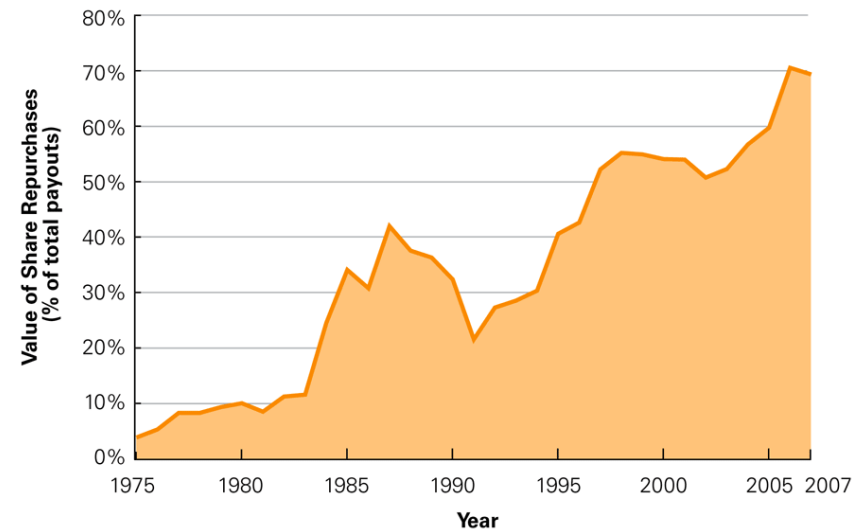
- The **higher tax rate on dividends** makes it **undesirable** for a firm to raise funds **to pay a dividend**.
 - When dividends are taxed at a higher rate than capital gains, if a firm raises money by issuing shares and then gives that money back to shareholders as a dividend, shareholders are hurt because they will receive less than their initial investment.
- When the **tax rate on dividends is greater than the tax rate on capital gains**, shareholders will **pay lower taxes if a firm uses share repurchases rather than dividends**.
 - This tax savings will increase the value of a firm that uses share repurchases rather than dividends.

The Tax Disadvantage of Dividends

- The optimal dividend policy when the dividend tax rate exceeds the capital gain tax rate is to pay no dividends at all.
 - The payment of dividends has declined on average over the last 30 years while the use of repurchases has increased.



US data. Source: Compustat



US firms excluding financials and utilities. Source: Compustat

Dividend Capture and Tax Clienteles

- The preference for share repurchases rather than dividends depends on the **difference between the dividend tax rate and the capital gains tax rate.**
 - Tax rates vary by income, (by jurisdiction, in the US), and by whether the stock is held in a retirement account.
 - Given these differences, firms may attract different groups of investors depending on their dividend policy.

The Effective Dividend Tax Rate

- Consider buying a stock just before it goes ex-dividend and selling the stock just after.
 - The equilibrium (no arbitrage) condition must be:

$$(P_{cum} - P_{ex}) (1 - \tau_g) = Div(1 - \tau_d)$$

- Which can be stated as

$$P_{cum} - P_{ex} = Div \times \left(\frac{1 - \tau_d}{1 - \tau_g} \right) = Div \times \left(1 - \frac{\tau_d - \tau_g}{1 - \tau_g} \right) = Div \times (1 - \tau_d^*)$$

Where P_{cum} is the cum-dividend price, P_{ex} is the ex-dividend price, τ_g is the capital gains rate tax, τ_d is the dividend tax rate.

- Thus, the **effective dividend tax rate** is

$$\tau_d^* = \left(\frac{\tau_d - \tau_g}{1 - \tau_g} \right)$$

This measures the additional tax paid by the investor per dollar of after-tax capital gains income that is instead received as a dividend.

The Effective Dividend Tax Rate: Example

Changes in the Effective Dividend Tax Rate

Problem

Consider an individual investor in the highest U.S. tax bracket who plans to hold a stock for one year. What was the effective dividend tax rate for this investor in 2002? How did the effective dividend tax rate change in 2003? (Ignore state taxes.)

Solution

From Table 17.2, in 2002 we have $\tau_d = 39\%$ and $\tau_g = 20\%$. Thus,

$$\tau_d^* = \frac{0.39 - 0.20}{1 - 0.20} = 23.75\%$$

This indicates a significant tax disadvantage of dividends; each \$1 of dividends is worth only \$0.7625 in capital gains. However, after the 2003 tax cut, $\tau_d = 15\%$, $\tau_g = 15\%$, and

$$\tau_d^* = \frac{0.15 - 0.15}{1 - 0.15} = 0\%$$

Therefore, the 2003 tax cut eliminated the tax disadvantage of dividends for a one-year investor.

Tax Differences across Investors

- The effective dividend tax rate differs across investors for a variety of reasons.
 - Income Level
 - different levels of income fall into different tax brackets (US)
 - Investment Horizon
 - Capital gains on stocks held less than 1 year, and dividends on stocks held less than 61 days are taxed at higher ordinary income tax rates.
 - Long-term investors can defer payment of capital gains taxes.
 - Investors who plan to bequeath shares to their heirs may avoid capital gains taxes altogether.
 - Type of Investor or Investment Account
 - Stocks held by individual investors in retirement accounts are not subject to taxes on dividends or capital gains (US), but there's discussion about changing this.
 - Stocks held through pension funds or nonprofit endowment funds are not subject to dividend or capital gains taxes. (US)
 - Corporations that hold stocks are able to exclude 70% (or even 80% if they hold more than 20% of the firm's equity) of dividends they receive from corporate taxes, but are unable to exclude capital gains
- As a result of their different tax rates investors will have varying preferences regarding dividends.

Tax Differences across Investors: Example

- **Example:**

Consider 4 different investors and the maximum U.S. federal tax rates as of 2009. **The effective dividend tax rate for each investor would be:**

- Buy and Hold Individual Investor, in a taxable account, planning to leave stock to her heirs:

$$\tau_d = 15\%; \tau_g = 0\%; \tau_d^* = 15\%$$

- One-Year Individual Investor, in a taxable account, planning to sell in 1 year:

$$\tau_d = 15\%; \tau_g = 15\%; \tau_d^* = 0\%$$

- Pension Fund:

$$\tau_d = 0\%; \tau_g = 0\%; \tau_d^* = 0\%$$

- Corporation:

$$\tau_d = (1 - 70\%) \times 35\% = 10.5\%; \tau_g = 35\%; \tau_d^* = -38\%$$

Clientele Effects

- **Clientele Effect:** When the dividend policy of a firm reflects the tax preference of its investor clientele.
 - Individuals in the highest tax brackets have a preference for stocks that pay no or low dividends, whereas tax-free investors and corporations have a preference for stocks with high dividends.

Investor Group	Dividend Policy Preference	Proportion of Investors
Individual investors	Tax disadvantage for dividends Generally prefer share repurchase (except for retirement accounts)	~52%
Institutions, pension funds	No tax preference Prefer dividend policy that matches income needs	~47%
Corporations	Tax advantage for dividends	~1%

Source: Proportions based on Federal Reserve Flow of Funds Accounts.

Clientele Effects

- **Dividend-Capture Theory:** absent transaction costs, investors can trade shares at the time of the dividend so that non-taxed investors receive the dividend.
 - An implication of this theory is that we should see large trading volume in a stock around the ex-dividend day, as high-tax investors sell and low-tax investors buy the stock in anticipation of the dividend, and then reverse those trades just after the ex-dividend date.

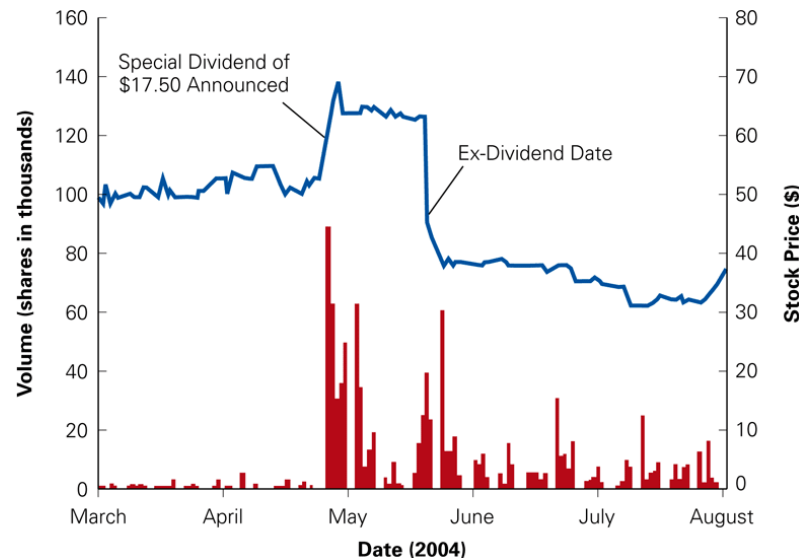


Figure 17.6 Volume and Share Price Effects of Value Line's Special Dividend

Payout versus Retention of Cash

- In **perfect capital markets**, once a firm has taken all positive-NPV investments, it is **indifferent** between saving excess cash and paying it out.
- If a firm has already taken all positive-NPV projects, any additional projects it takes on are zero or negative-NPV investments.
 - Rather than waste excess cash on negative-NPV projects, a firm can use the cash to purchase financial assets.
 - In perfect capital markets, buying and selling securities is a zero-NPV transaction, so it should not affect firm value.
- **Thus, with perfect capital markets, the retention versus payout decision is irrelevant.**

Payout versus Retention of Cash in Perfect Capital Markets: Example

Example: Payne Enterprises has \$20,000,000 in excess cash.

- Payne is considering investing the cash in one-year Treasury bills paying 5% interest, and then using the cash to pay a dividend next year.
- Alternatively, the firm can pay a dividend immediately and shareholders can invest the cash on their own.
- **In a perfect capital market, which option will shareholders prefer?**
 - If Payne pays an immediate dividend, the shareholders receive \$20,000,000 today.
 - If Payne retains the cash, at the end of one year the company will be able to pay a dividend of $\$20,000,000 \times (1.05) = \$21,000,000$.
 - If shareholders invest the \$20,000,000 in Treasury bills themselves, they would have \$21,000,000 at the end of 1 year.
 - The present value in either scenario is:
$$\$21,000,000 \div 1.05 = \$20,000,000$$
- Thus shareholders are indifferent about whether the firm pays the dividend immediately or retains the cash.

MM Payout Irrelevance in Perfect capital Markets

In perfect capital markets, if a firm invests excess cash flows in financial securities, the firm's choice of payout versus retention is irrelevant and does not affect the initial share price.

Payout versus Retention of Cash: Taxes

- Corporate taxes make it costly for a firm to retain excess cash.
 - Cash is equivalent to negative leverage, so the tax advantage of leverage implies a tax disadvantage to holding cash.
- **Example:** What if Payne has a marginal **tax rate of 39%**. Would a tax-exempt endowment prefer that Payne use its excess cash to pay the dividend immediately or invest the cash in a Treasury bill paying 5% interest and then pay out a dividend?
 - If **Payne pays a dividend today**, shareholders receive \$20,000,000.
 - If **Payne retains the cash for one year**, it will earn an after-tax return on the Treasury bills of: $5\% \times (1 - 0.39) = 3.05\%$ At the end of the year, Payne will pay a dividend of $\$20,000,000 \times (1.0305) = \$20,610,000$.
 - This amount is less than the \$21,000,000 the endowment would have earned if they had invested the \$20,000,000 in the Treasury bills themselves.

Payout versus Retention of Cash: Taxes

- The **decision to pay out versus retain cash** may also affect the taxes paid by shareholders.
 - When a firm retains cash, it must pay corporate tax on the interest it earns. In addition, the investor will owe capital gains tax on the increased value of the firm. In essence, the **interest on retained cash is taxed twice**.
 - If the **firm paid the cash** to its shareholders instead, they could invest it and be **taxed only once on the interest** that they earn.
- The **effective tax disadvantage of retaining cash** therefore depends on the combined effect of the corporate and capital gains taxes, compared to the single tax on interest income.

$$\tau_{retain}^* = \left[1 - \frac{(1 - \tau_c)(1 - \tau_g)}{(1 - \tau_i)} \right]$$

Payout versus Retention of Cash: Issuance and Distress Costs

- Generally, firms retain cash balances to cover potential future cash shortfalls, despite the tax disadvantage to retaining cash.
 - A firm might accumulate a large cash balance if there is a reasonable chance that future earnings will be insufficient to fund future positive-NPV investment opportunities.
- The **cost of holding cash** to cover future potential cash needs should be **compared to the reduction in transaction, agency, and adverse selection costs of raising new capital** through new debt or equity issues.

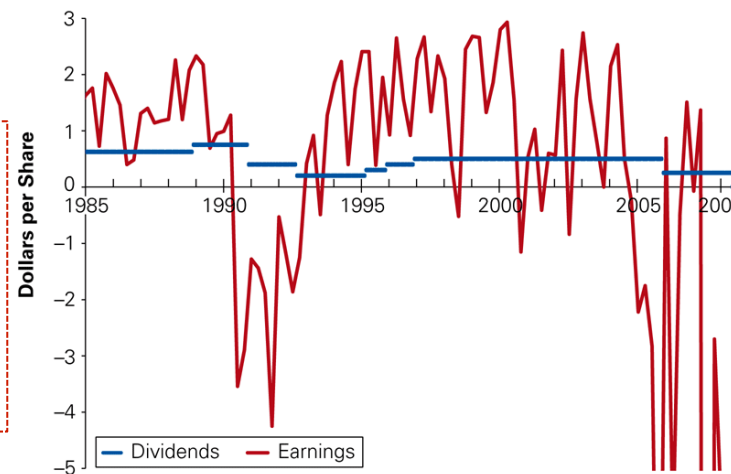
Payout versus Retention of Cash: Agency Costs of Retaining Cash

- **Agency Costs of Retaining Cash:** When firms have excessive cash, managers may use the funds inefficiently by paying excessive executive perks, over-paying for acquisitions, etc.
 - Paying out excess cash through dividends or share repurchases, rather than retaining cash, can boost the stock price by reducing managers' ability and temptation to waste resources.
- Firms should choose to **retain to help with future growth opportunities and to avoid financial distress costs.**
 - It is not surprising that high-tech and biotechnology firms tend to retain and accumulate large amounts of cash.

Signaling with Payout Policy

- An important market imperfection is **asymmetric information**.
- **Dividend Smoothing:** The practice of maintaining relatively constant dividends
 - Firms change dividends infrequently and dividends are much less volatile than earnings

Figure 17.7
GM's Earnings
and Dividends
per Share,
1985–2008



- Research has found that management desires to maintain a long-term target level of dividends as a fraction of earnings.

Signaling with Payout Policy

- **Dividend Signaling Hypothesis:** The idea that dividend changes reflect managers' views about a firm's future earning prospects
 - If firms smooth dividends, the firm's dividend choice will contain information regarding management's expectations of future earnings.

- When a firm increases its dividend, it sends a positive signal to investors that management expects to be able to afford the higher dividend for the foreseeable future.
- When a firm decreases its dividend, it may signal that management has given up hope that earnings will rebound in the near term and so need to reduce the dividend to save cash.

An increase of a firm's dividend might also signal a lack of investment opportunities.

Conversely, a firm might cut its dividend to exploit new positive-NPV investment opportunities. In this case, the dividend decrease might lead to a positive, rather than negative, stock price reaction.

Signaling and Share Repurchases

- **Share repurchases are a credible signal** that the shares are under-priced, because if they are over-priced a share repurchase is costly for long-term shareholders.
 - If investors believe that **managers** have better information regarding the firm's prospects and **act on behalf of long-term shareholders**, then investors will react favorably to share repurchase announcements.
 - **Example:**
 - Clark Industries has **200 million shares outstanding**, a current **share price of \$30**, and **no debt**. **Management believes** that the shares are underpriced, and **the true value is \$35**. Clark plans to **pay \$600 million in cash** to its shareholders by **repurchasing at the current market price**. Clark **repurchases: $\$600\text{m}/\$30 = 20$ million shares**.
 - After the transaction **new information** comes out that **confirms** the **manager's initial perception** of total equity value of **$200\text{million} * \$35 = \7000 million**. Of this the company already spent \$600 million in the repurchase. The **current equity value would then be: $\$7\text{billion} - \$600\text{ million} = \$6.4$ billion**. On a per share basis this corresponds to a **stock price increase to $\$6.4\text{ billion}/180\text{ million shares} = \35.56** .

Stock Dividends, Splits and Spin-Offs

- A firm can pay a type of dividend that does not involve cash: a **Stock dividend**.
 - A shareholder who holds the stock before the ex-dividend date receives additional shares of the stock itself (called a **Stock Split** if higher than 50%), or of a subsidiary (**Spin-Off**).
 - Example: A stock dividend of 50% means that each shareholder receives 1 new share for every two shares owned. It's known as a 3:2 ("3 for 2") stock split.

Stock Splits

- With a **stock dividend**, a firm does not pay out any cash to shareholders. As a result, the total market value of the firm's equity is unchanged.
 - The **only thing that is different is the number of shares outstanding**.
 - The **stock price will therefore fall** because the same total equity value is now divided over a larger number of shares.
 - Stock Dividends are **not taxed**.
- **Why do this?**
 - To keep price not too high for small investors.
 - Firms also try to keep it not too low because of transaction costs (e.g., for NYSE and NASDAQ the minimum size of one tick is \$0.01, which is larger for stocks with a low price, in percentage terms.)
 - It's also possible to do a **reverse split**.

Spin-Offs

- **Spin-off**: When a firm sells a subsidiary by selling shares in the subsidiary alone
 - Non-cash special dividends are commonly used to spin off assets or a subsidiary as a separate company.
- Spin-offs offer two **advantages**:
 - Avoid the transaction costs associated with a subsidiary sale.
 - The special dividend is not taxed as a cash distribution.