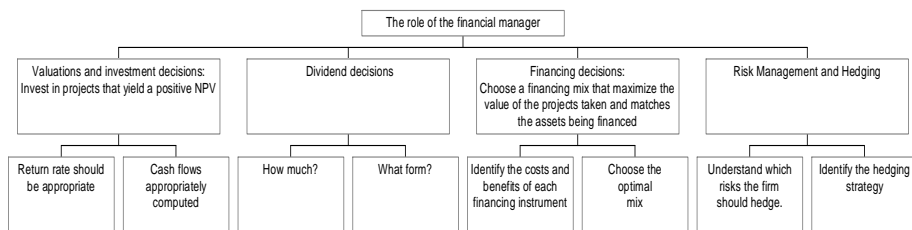


Dividend Policy

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Corporate finance



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Objective of this lecture

- Understand how much of earnings should be retained and how much returned to shareholders
 - Should firms pay out a constant fraction of earnings as dividends? Or pay a constant dividend? Or something else?
 - When should a firm start paying dividends?
 - Why doesn't Microsoft pay dividends? Should they?
- Understand the channels for remitting earnings to shareholders, the differences between them, and when some are preferred to others

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Dividend Types

- **Regular.** Regular dividends are those the company expects to maintain, paid quarterly (sometimes monthly, semiannually or annually).
- **Extra.** Those that may not be repeated.
- **Special.** Those that are unlikely to be repeated.
- **Stock Dividend.** Paid in shares of stocks. Similar to stock splits, both increase the number of shares outstanding and reduce the stock price.

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Important Dates for Dividend Payments

- Announcement date
 - the dividend is declared at a board of directors meeting
- Ex-dividend day
 - four business days before record date
 - first day the stock trades without dividends (ex-dividend stock)
- Record date
 - date at which list of qualified shareholders is made up
- Payment date
 - date checks sent to shareholders of record

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Measures of Dividend Policy

- Dividend Payout:
 - measures the percentage of earnings that the company pays in dividends;
 - = $\text{Dividends/Earnings}$
- Dividend Yield
 - measures the return that an investor can make from dividends alone.
 - = $\text{Dividends/Stock price}$

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insert 2 slides with data.

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Miller Modigliani Theorem on Dividends

Under the following assumptions:

- Investment is held constant
- No transactions costs. (E.g. mailing costs, investment banking fees, brokerage commissions)
- Perfect capital markets.
 - Information is symmetric
 - Financial markets are efficient. Market values are the discounted value of expected future cashflows.
- Managers are acting to maximize shareholders' wealth.
- Taxes. No differential between the way dividends and other distributions to shareholders are taxed at either the personal or corporate level

The value of the firm and the wealth of the shareholders do not change when you change dividend policy

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How MM dividend theory works

- First decide whether or not to invest.
- Each period the NPV(project)= $-800+(1600/1.1)=1454-800=654$

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If the firm invests (optimally)
in each period the free cash flow is:

Year	0	1	2	3	4	5+
Operating Cash Flow	1,600	1,600	1,600	1,600	1,600	1,600
Investment	(800)	(800)	(800)	(800)	(800)	(800)
Total Free Cashflow	800	800	800	800	800	800
Free Cash Flow of Equity	800	800	800	800	800	800

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How MM dividend theory works

- Suppose that the firm decide to distribute the entire free cash flow for share to the equity holder. Shareholder distribution is \$800 or \$1 per share.
- STEP 1: Compute the value of the firm.
- Value-of-the-firm (cum-dividend)= $800 + \sum 800/(1+r)^t = 8800$
- Value-of-the-firm (ex-dividend)=Value-of-the-firm(cum-dividend) - dividends=8000
- Price of share (cum- dividend) = $8800/800 = \$11$
- Price of share (ex- dividend)= $8000/800 = \$10$
- Note that:
- Shareholders' wealth per share=\$11

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Dividend Arbitrage

- Assume that the price does not drop on the ex-dividend day. How would you exploit this differential?
 - Invest in the stock for the long term
 - Sell short the day before the ex-dividend day, buy on the ex-dividend day
 - Buy just before the ex-dividend day, and sell after.
 - Something else.

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How MM dividend theory works

- **Now change dividend policy.**
- dividend = \$1600 (2 dollars per share)
- the firm announces an equity issue for 800 dollars to finance the investment (ex dividend shares)

- Note that now the firm value ex dividend is :
- Value of the firm (ex dividend)=
=Value of the firm (cum dividend)- dividends +new cash=8000
- the new shareholders receive \$800 of equity
Old shares represent 90% of the firm
New shares represent 10% of the firm
- This implies:
total number of shares= 889
new shares=89
old shares=800

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How MM dividend theory works

- What is the price of the shares?
Price of share (ex dividend)=8000/889=\$9

- **Dividend policy is irrelevant:**
- Value of the firm is always the same
- Old shareholder's wealth does not change \$11.

- **What has changed?** The allocation of risk has changed. Old shareholders are bearing less risk (more cash and less stock). The distribution of ownership has also changed.

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In a MM world the form of shareholders' compensation does not matter

- Suppose that the firm has maintained the same dividend policy. Can shareholders reverse the process with homemade dividends?
- **Stock Repurchases.**
 - Set dividends=0
 - Repurchase=\$800 worth of stock on the open market.
 - The company buys 73 shares. Why?
- The company's value is \$8000 (after the \$800 repurchase)
- Shareholders' wealth is unchanged.

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Comparison between a repurchase and dividend

- 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.
- The total wealth of old shareholders does not change

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Summary of MM theorem implications

- Dividends and share repurchase do not affect the wealth of the shareholders.
- Distribution policy of the firm is irrelevant under the MM assumptions

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Modigliani-Miller according to Merton Miller

“I have a simple explanation [for the first Modigliani-Miller proposition]. It's after the ball game, and the pizza man comes up to Yogi Berra and he says, 'Yogi, how do you want me to cut this pizza, into quarters?' Yogi says, 'No, cut it into eight pieces, I'm feeling hungry tonight. Now when I tell that story the usual reaction is, 'And you mean to say that they gave you a [Nobel] prize for that?’”

Merton H. Miller, from his testimony in Glendale Federal Bank's lawsuit against the U.S. government, December 1997

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Lintner's study on how managers pay dividends

- Firms have long-run target dividend payout ratio
- Managers focus on dividend changes even more than absolute level of dividends
- Dividend changes follows shifts in long-run sustainable earnings. Managers smooth dividends
- Managers are reluctant to make dividends changes that might have to be reversed.

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Lintner suggests that managers acts as
Dividend Policy is relevant.

- Who is wrong?
 - Managers
 - Modigliani & Miller

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Assumptions may be violated
What are the consequences on dividend
policy?

- **Investments are not held constant**
- **There are transaction costs**
 - There are costs to mailing dividends and selling stocks. Brokerage commissions on equities range from 3% for 100 shares at \$10/share to 0.1 percent for 5000 shares at \$75 per share.

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Violation of MM assumptions

- **Capital markets are not perfect:**
 - either because there is asymmetric information
 - or because markets are not efficient

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Violation of MM assumptions

- There is asymmetric information:
 - dividends changes can and do change the markets perception of the firm's value

Which type of Signals the Dividends may convey?

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Empirical evidence of the effect of dividends on stock price

- The market responds to dividend announcements changes (Aharony and Swary)
 - Dividend increases are followed by a stock price increase of approximately .36%.
 - Dividend decreases are followed by a stock price decline of -1.1 to -1.4%.
- Magnitude of stock price response.
 - An annual rate of return of 12% implies a daily average return of 0.05%.

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Violation of MM assumptions

- Markets are not efficient
 - Stock are mispriced: then the stock sale is no longer a zero NPV transaction

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Violation of MM assumptions

Managers preferences differ from shareholders' preferences.

- Managers may extract free cash flow from the firm
 - Solution: link managers' compensation to the firm's stock price. Problem: even if they care about stock prices they may not care about dividends.
- Managers may have short term objectives. If they are not around tomorrow, they may prefer to underinvest and inflate dividends.
 - Solution?

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Violation of MM assumptions

- Taxes: there is a differential between the way dividends and other distribution to shareholders are taxed at either the personal or corporate level.

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Violation of MM assumptions: taxes

- Taxation of individuals:
 - Compare statutory tax rate on capital gains and tax on dividends.
 - Strong differences in each country
 - Tax advantage of deferral
 - Basis step up at death

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Violation of MM assumptions: taxes

- Taxation of corporations:
 - If a corporation owns less than 20% of the firm, deduction is 70% $\Rightarrow .30 \cdot .34 = 10.2$
 - If a corporation owns more than 20% of the firm (but less than 80%), deduction is 80% $\Rightarrow .20 \cdot .34 = 6.8$
 - If a corporation owns more than 60% of the firm, deduction is 100%
- Taxation of institutions
 - Pension, mutual funds taxes are assessed when the money is paid out (like capital gains).

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A clientele based explanation

- **Basis:** Investors may form clienteles based upon their tax brackets.
 - Investors in high tax brackets may invest in stocks which do not pay dividends and those in low tax brackets may invest in dividend paying
- **Evidence:** A study of 914 investors' portfolios to see if their portfolio positions were affected by their tax brackets:
 - Older investors were more likely to hold high dividend stocks and
 - Poorer investors tended to hold high dividend stocks

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Dividend policy: Takeaway

- Does Dividend policy Matter?
- No: The Modigliani and Miller propositions.
- Yes:
 - Taxes
 - Asymmetric information
 - Agency problems
- Understand the mechanics of dividend policy
- Understand how violations of MM hypothesis affect optimal dividend policy

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