



FIN 503-MANAGERIAL FINANCE

Ch13-14-15-17 – Quick Review

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Chapter 13

Return, Risk, and the Security Market Line

Expected return

- Expected returns are based on the probabilities of possible outcomes
- In this context, “expected” means average if the process is repeated many times
- The “expected” return does not even have to be a possible return

$$E(R) = \sum_{i=1}^n p_i R_i$$

Variance and standard deviation

- Variance and standard deviation measure the volatility of returns
- Using unequal probabilities for the entire range of possibilities
- Weighted average of squared deviations

$$\sigma^2 = \sum_{i=1}^n p_i (R_i - E(R))^2$$

Example

- Consider the following information:

State	Probability	ABC, Inc. (%)
Boom	.25	15
Normal	.50	8
Slowdown	.15	4
Recession	.10	-3

- What is the expected return?

$$E(R) = \sum_{i=1}^n p_i R_i$$

$$ER = 0.25(15) + 0.5(8) + 0.15(4) + 0.1(-3) = 8.05\%$$

- What is the variance?

$$\sigma^2 = \sum_{i=1}^n p_i (R_i - E(R))^2$$

$$\sigma^2 = 0.25(15-8.05)^2 + 0.5(8-8.05)^2 + 0.15(4-8.05)^2 + 0.1(-3-8.05)^2 = 26.7475$$

- What is the standard deviation?

$$\sigma = \sqrt{26.7475} = 5.17\%$$

Portfolios

- A portfolio is a **collection of assets**
- An asset's risk and return are important in **how** they affect the risk and return of the portfolio
- The risk-return trade-off for a portfolio is **measured** by the portfolio expected return and standard deviation, just as with individual assets

Portfolio expected return and standard deviation

- The expected return of a portfolio is the weighted average of the expected returns of the respective assets in the portfolio

$$E(R_p) = \sum_{j=1}^m w_j E(R_j)$$

- You can also find the expected return by finding the portfolio return in each possible state and computing the expected value as we did with individual securities

Example Portfolio Variance

- Consider the following information

Invest 50% of your money in Asset A				
State	Probability	A	B	Portfolio
Boom	0.4	30%	-5%	12.5%
Bust	0.6	-10%	25%	7.5%

If A and B are your only choices, what percent are you investing in Asset B? 50%

- What are the expected return and standard deviation for each asset?

$$E(R) = \sum_{i=1}^n p_i R_i$$

- Asset A: $E(R_A) = 0.4(30) + 0.6(-10) = 6\%$
Variance(A) = $0.4(30 - 6)^2 + 0.6(-10 - 6)^2 = 384$
Std. Dev.(A) = 19.6%

- Asset B: $E(R_B) = 0.4(-5) + 0.6(25) = 13\%$
Variance(B) = $0.4(-5 - 13)^2 + 0.6(25 - 13)^2 = 216$
Std. Dev.(B) = 14.7%

- What are the expected return and standard deviation for the portfolio?

- Portfolio return in boom = $0.5(30) + 0.5(-5) = 12.5$
 Portfolio return in bust = $0.5(-10) + 0.5(25) = 7.5$

- Expected return = $0.4(12.5) + 0.6(7.5) = 9.5$ or $Expected\ return = 0.5(6) + 0.5(13) = 9.5$

- Variance of portfolio = $0.4(12.5 - 9.5)^2 + 0.6(7.5 - 9.5)^2 = 6$
 Standard deviation = 2.45%

- Note that the variance is NOT equal to $0.5(384) + 0.5(216) = 300$ and
 Standard deviation is NOT equal to $0.5(19.6) + 0.5(14.7) = 17.17\%$

- You recently purchased a stock that is expected to earn 22 percent in a booming economy, 9 percent in a normal economy, and lose 33 percent in a recessionary economy. There is a 5 percent probability of a boom and a 75 percent chance of a normal economy. What is your expected rate of return on this stock?

$$E(R) = \sum_{i=1}^n p_i R_i$$

$$E(r) = (0.05 \times 0.22) + (0.75 \times 0.09) + (0.20 \times -0.33) = 1.25 \%$$

- The returns on the common stock of New Image Products are quite cyclical. In a boom economy, the stock is expected to return 32 percent in comparison to 14 percent in a normal economy and a negative 28 percent in a recessionary period. The probability of a recession is 25 percent while the probability of a boom is 10 percent. What is the standard deviation of the returns on this stock?

$$E(R) = \sum_{i=1}^n p_i R_i$$

$$E(r) = (0.10 \times 0.32) + (0.65 \times 0.14) + (0.25 \times -0.28) = 0.053$$

$$\sigma^2 = \sum_{i=1}^n p_i (R_i - E(R))^2$$

$$\text{Variance} = 0.10(0.32 - 0.053)^2 + 0.65(0.14 - 0.053)^2 + 0.25(-0.28 - 0.053)^2 = 0.039771$$

$$\text{Std dev} = \sqrt{0.039771} = 19.94 \%$$

3. What is the standard deviation of the returns on a portfolio that is invested 52 percent in stock Q and 48 percent in stock R?

State of Economy	Probability of State of Economy	Returns if State Occurs	
		Stock Q	Stock R
Boom	10%	14%	16%
Normal	90%	8%	11%

$$E(R) = \sum_{i=1}^n p_i R_i$$

$$E(r)_{\text{Boom}} = (0.52 \times 0.14) + (0.48 \times 0.16) = 0.1496$$

$$E(r)_{\text{Normal}} = (0.52 \times 0.08) + (0.48 \times 0.11) = 0.0944$$

$$E(r)_{\text{Portfolio}} = (0.10 \times 0.1496) + (0.90 \times 0.0944) = 0.09992$$

$$\text{Var}_{\text{Portfolio}} = [0.10 \times (0.1496 - 0.09992)^2] + [0.90 \times (0.0944 - 0.09992)^2] = 0.000274$$

$$\text{Std dev} = \sqrt{0.000274} = 1.66\%$$

4. Consider the following information

State	Probability	X	Z
Boom	0.25	15%	10%
Normal	0.60	10%	9%
Recession	0.15	5%	10%

What are the expected return and standard deviation for a portfolio with an investment of \$6,000 in asset X and \$4,000 in asset Z?

$$X = 6,000, Z = 4,000 \quad \text{total amount investment} = 6,000 + 4,000 = 10,000$$

$$\text{Assets X} = 6,000 / 10,000 = 0.60$$

$$\text{Assets Z} = 4,000 / 10,000 = 0.40$$

$$E(R) = \sum_{i=1}^n p_i R_i$$

$$E(r)_{\text{Boom}} = (0.60 \times 0.15) + (0.40 \times 0.10) = 0.13 = 13\%$$

$$E(r)_{\text{Normal}} = (0.60 \times 0.10) + (0.40 \times 0.09) = 0.096 = 9.6\%$$

$$E(r)_{\text{Recession}} = (0.60 \times 0.05) + (0.40 \times 0.10) = 0.07 = 7\%$$

$$E(r)_{\text{Portfolio}} = (0.25 \times 0.13) + (0.60 \times 0.096) + (0.15 \times 0.07) = 0.1006 = 10.06\%$$

$$\text{Var}_{\text{Portfolio}} = [0.25 \times (0.13 - 0.1006)^2] + [0.60 \times (0.096 - 0.1006)^2] + [0.15 \times (0.07 - 0.1006)^2] = 0.0003692$$

$$\text{Std dev} = \sqrt{0.0003692} = 0.0192 = 1.92\%$$

5. What is the beta of the following portfolio?

Stock	Amount Invested	Security Beta
A	\$6,700	1.58
B	\$4,900	1.23
C	\$8,500	0.79

$$\text{Value}_{\text{Portfolio}} = \$6,700 + \$4,900 + \$8,500 = \$20,100$$

$$\text{Beta}_{\text{Portfolio}} = (\$6,700 / \$20,100 \times 1.58) + (\$4,900 / \$20,100 \times 1.23) + (\$8,500 / \$20,100 \times 0.79) = 1.16$$

Capital Asset Pricing Model (CAPM)

- The capital asset pricing model defines the relationship between risk and return
- $E(R_A) = R_f + \beta_A(E(R_M) - R_f)$
- If we know an asset's systematic risk, we can use the CAPM to determine its expected return
- This is true whether we are talking about financial assets or physical assets

Example CAPM

- Consider the betas for each of the assets given earlier. If the risk-free rate is 4.15% and the market risk premium is 8.5%, what is the expected return for each?

Security	Beta	Expected Return
DCLK	2.685	$4.15 + 2.685(8.5) = 26.97\%$
KO	0.195	$4.15 + 0.195(8.5) = 5.81\%$
INTC	2.161	$4.15 + 2.161(8.5) = 22.52\%$
KEI	2.434	$4.15 + 2.434(8.5) = 24.84\%$

- The risk free rate is 4%, and the required return on the market is 12%. What is the required return on an asset with a beta of 1.5?
 - $R = 0.04 + 1.5 \times (0.12 - 0.04) = 0.16$
- What is the reward/risk ratio?
 - The reward/risk ratio is 8%
- What is the required return on a portfolio consisting of 40% of the asset above and the rest in an asset with an average amount of systematic risk?
 - $R = (0.4 \times 0.16) + (0.6 \times 0.12) = 0.136$

6. Which one of the following stocks is correctly priced if the risk-free rate of return is 3.2 percent and the market rate of return is 11.76 percent?

Stock	Beta	Expected Return
A	0.87	11.03%
B	1.09	12.97%
C	1.18	13.21%
D	1.34	15.02%
E	1.62	17.07%

$$E(r)_A = 0.032 + [0.87 \times (0.1176 - 0.032)] = 0.1065$$

$$E(r)_B = 0.032 + [1.09 \times (0.1176 - 0.032)] = 0.1253$$

$$E(r)_C = 0.032 + [1.18 \times (0.1176 - 0.032)] = 0.1330$$

$$E(r)_D = 0.032 + [1.34 \times (0.1176 - 0.032)] = 0.1467$$

$$E(r)_E = 0.032 + [1.62 \times (0.1176 - 0.032)] = 0.1707 \text{ Stock E is correctly priced.}$$

Chapter 14 Cost of Capital

Capital Structure Weights

- Notation
 - E = market value of equity = # of outstanding shares times price per share
 - D = market value of debt = # of outstanding bonds times bond price
 - V = market value of the firm = $D + E$
- Weights
 - $w_E = E/V$ = percent financed with equity
 - $w_D = D/V$ = percent financed with debt
- We are **concerned with after-tax cash flows**, so we also need to consider the effect of taxes on the various costs of capital
- **Interest expense reduces our tax liability**
 - This reduction in taxes reduces our cost of debt
 - After-tax cost of debt = $R_D(1-T_C)$
- Dividends are not tax deductible, so there is **no tax impact on the cost of equity**
- **WACC = $w_E R_E + w_D R_D(1-T_C)$ or**
- **WACC = $(E/V) R_E + (D/V) R_D(1-T_C) + (P/V) R_P + (CL/V) R_{CL}(1-T_C)$.**
where CL/V represents the market value of current liabilities in the firm's capital structure and $V = E + D + P + CL$.

1. **market price of the stock is \$22.40 and the growth rate is 5 percent. What is the firm's cost of equity?**

$$R_E = R_f + \beta_E (E(R_M) - R_f) \quad \text{Or}$$

$$R_E = \frac{D_1}{P_0} + g$$

$$R_E = \frac{\$0.80}{\$22.40} + 0.05 = 8.57\%$$

2. **The Shoe Outlet has paid annual dividends of \$0.65, \$0.70, \$0.72, and \$0.75 per share over the last four years, respectively. The stock is currently selling for \$26 a share. What is this firm's cost of equity?**

-- we should be use the historical average to get (g), *for Example*:

$$(\$0.70 - \$0.65)/\$0.65 = 0.076923$$

$$(\$0.72 - \$0.70)/\$0.70 = 0.028571$$

$$(\$0.75 - \$0.72)/\$0.72 = 0.041667$$

$$g = (0.076923 + 0.028571 + 0.041667)/3 = 0.049054$$

$$D_1 = D_0(1+g)$$

$$D_1 = (\$0.75 \times (1 + 0.049054))$$

$$R_E = \frac{D_1}{P_0} + g$$

$$R_E = [(\$0.75 \times 1.049054)/\$26] + 0.049054 = 7.93\%$$

• One method for estimating the growth rate is to use the historical average

Year	Dividend	Percent Change
2005	1.23	-
2006	1.30	$(1.30 - 1.23) / 1.23 = 5.7\%$
2007	1.36	$(1.36 - 1.30) / 1.30 = 4.6\%$
2008	1.43	$(1.43 - 1.36) / 1.36 = 5.1\%$
2009	1.50	$(1.50 - 1.43) / 1.43 = 4.9\%$

Average = $(5.7 + 4.6 + 5.1 + 4.9) / 4 = 5.1\%$

3. **Sweet Treats common stock is currently priced at \$19.06 a share. The company just paid \$1.15 per share as its annual dividend. The dividends have been increasing by 2.5 percent annually and are expected to continue doing the same. What is this firm's cost of equity?**

$$D_1 = D_0(1+g)$$

$$D_1 = (\$1.15 \times (1 + 0.025))$$

$$R_E = \frac{D_1}{P_0} + g$$

$$R_E = [(\$1.15 \times 1.025)/\$19.06] + 0.025 = 8.68\%$$

4. **Southern Home Cookin' just paid its annual dividend of \$0.65 a share. The stock has a market price of \$13 and a beta of 1.12. The return on the U.S. Treasury bill is 2.5 percent and the market risk premium is 6.8 percent. What is the cost of equity?**

$$R_E = R_f + \beta_E (E(R_M) - R_f)$$

$$R_E = 0.025 + (1.12 \times 0.068) = 10.12\%$$

5. Phillips Equipment has 80,000 bonds outstanding that are selling at par. Bonds with similar characteristics are yielding 6.75 percent. The company also has 750,000 shares of 7 percent preferred stock and 2.5 million shares of common stock outstanding. The preferred stock sells for \$53 a share. The common stock has a beta of 1.34 and sells for \$42 a share. The U.S. Treasury bill is yielding 2.8 percent and the return on the market is 11.2 percent. The corporate tax rate is 38 percent. What is the firm's weighted average cost of capital?

$$R_E = R_f + \beta_E (E(R_M) - R_f)$$

$$R_e = 0.028 + 1.34 (0.112 - 0.028) = 0.14056$$

$$R_p = D / P_0$$

$$R_p = (0.07 \times \$100) / \$53 = 0.13208$$

Value of:

$$\text{Debt: } 80,000 \times 1,000 = 80 \text{ m}$$

$$\text{Preferred: } 750,000 \times 53 = 39.75 \text{ m}$$

$$\text{Common: } 2.5 \text{ m} \times 42 = 105 \text{ m}$$

- Total = 80 m + 39.75 m + 105 m = 224.75 m

$$\text{WACC} = w_E R_E + w_D R_D (1 - T_C) \text{ or}$$

$$\text{WACC} = (E/V) R_E + (D/V) R_D (1 - T_C) + (P/V) R_P + (CL/V) R_{CL} (1 - T_C).$$

$$\text{WACC} = (\$105\text{m}/\$224.75\text{m}) (0.14056) + (\$39.75\text{m}/\$224.75\text{m}) (0.13208) + (\$80\text{m}/\$224.75\text{m}) (0.0675) (1 - 0.38) = 10.39 \%$$

6. A corporation has 10,000 bonds outstanding with a 6% annual coupon rate, 8 years to maturity, a \$1,000 face value, and a \$1,100 market price.

The company's 100,000 shares of preferred stock pay a \$3 annual dividend, and sell for \$30 per share. The company's 500,000 shares of common stock sell for \$25 per share and have a beta of 1.5. The risk free rate is 4%, and the market return is 12%.

Assuming a 40% tax rate, what is the company's WACC?

Value of:

$$\text{Debt: } 10,000 \times 1,100 = 11 \text{ m}$$

$$\text{Preferred: } 100,000 \times 30 = 3 \text{ m}$$

$$\text{Common: } 500,000 \times 25 = 12.5 \text{ m}$$

$$\text{-- Total} = 11 \text{ m} + 3 \text{ m} + 12.5 \text{ m} = 26.5 \text{ m}$$

$$R_D = [N = 8; PV = 1,100; PMT = 60; FV = 1,000] = 4.48\%$$

$$R_E = R_f + \beta_E (E(R_M) - R_f)$$

$$R_e = 0.04 + 1.5 (0.12 - 0.04) = 0.16 = 16\%$$

$$R_p = D / P_0$$

$$R_p = \$3 / \$30 = 0.10 = 10\%$$

Weight of

$$\text{Debt} = (D/V) = (11 \text{ m} / 26.5 \text{ m}) = 0.4151 = 42\%$$

$$\text{Preferred} = (P/V) = (3 \text{ m} / 26.5 \text{ m}) = 0.1132 = 11\%$$

$$\text{Common} = (E/P) = (12.5 \text{ m} / 26.5 \text{ m}) = 0.4717 = 47\%$$

- WACC = $w_E R_E + w_D R_D (1 - T_C)$ or

$$\text{WACC} = (E/V) R_E + (D/V) R_D (1 - T_C) + (P/V) R_P + (CL/V) R_{CL} (1 - T_C).$$

$$\text{WACC} = (0.4717 \times 0.16) + [(0.4151 \times 4.48\%) \times (1 - 0.4)] + (0.1132 \times 0.10) = 0.0977 = 9.8\%$$

Chapter 15

Raising Capital

Venture Capital

- Private financing for relatively new businesses in exchange for equity
- Usually entails some hands-on guidance
- The company should have an “exit” strategy
 - Sell the company – VC benefits from proceeds from sale
 - Take the company public – VC benefits from IPO
- Many VC firms are formed from a group of investors that pool capital and then have partners in the firm decide which companies will receive financing
- Some large corporations have a VC division

How to choose VC

- Look for **financial strength** (you want to have the option to obtain additional financing)
- Choose a VC that has a management style that is compatible with your own
- Obtain and check references
- What **contacts** (will the VC provide you with additional business contacts that can help your business succeed) does the VC have?
- **Exit strategy** – VCs are not long term investors – what are the provisions for the VC getting out of the business?

What is IPO underpricing, and why might it persist?

- **IPO underpricing:** (Close price on the first trading day-Offer price)/Offer price
- Reasons for underpricing:
 - Create incentive for investors to reinvest
 - Litigation concern
 - Easier to sell shares
- Encourage investors to reveal their demand information

Underwriters

- Services provided by **underwriters**
 - Formulate method used to issue securities
 - Price the securities
 - Sell the securities
 - Price stabilization by lead underwriter
- **Syndicate** – group of investment bankers that market the securities and share the risk associated with selling the issue
- **Spread** – difference between what the syndicate pays the company and what the security sells for initially in the market

Services provided by Underwriters

- Some of the important services provided by underwriters are formulating methods used to issue securities, pricing the securities, selling the securities, and pricing stabilization by the lead underwriter.
 - Filing documents (prospectus).
 - Giving advice (e.g., security type, issue timing, etc).
 - Formulating the method used to issue the securities (firm commitment, best efforts, or auction).
 - Pricing and selling the new securities.
 - Determining the amount of the offer (e.g., total offer size, as well as the shares allocation among investors).
 - Market stabilization

Types of underwritings

- **Firm Commitment**
 - Issuer sells entire issue to underwriting syndicate
 - The syndicate then resells the issue to the public
 - The underwriter makes money on the spread between the price paid to the issuer and the price received from investors when the stock is sold
 - The syndicate bears the risk of not being able to sell the entire issue for more than the cost
 - Most common type of underwriting in the United States
- **Best effort**
 - Underwriter must make their “best effort” to sell the securities at an agreed-upon offering price
 - The company bears the risk of the issue not being sold
 - The offer may be pulled if there is not enough interest at the offer price. In this case, the company does not get the capital, and they have still incurred substantial flotation costs

- Not as common as it previously was
- **Auction**
 - Underwriter accepts a series of bids that include number of shares and price per share
 - The price that everyone pays is the highest price that will result in all shares being sold
 - There is an incentive to bid high to make sure you get in on the auction but knowing that you will probably pay a lower price than you bid
 - The Treasury has used Dutch auctions for years
 - Google was the first large Dutch auction IPO

Seasoned Equity Offering (Value of Right)

- The price specified in a rights offering is generally less than the current market price
- The share price will adjust based on the number of new shares issued
- The value of the right is the difference between the old share price and the “new” share price

Issuance of debt (types of Debt)

- Bonds – public issue of long-term debt
- Private issues
 - Term loans
 - Direct business loans from commercial banks, insurance companies, etc.
 - Maturities 1 – 5 years
 - Repayable during life of the loan
 - Private placements
 - Similar to term loans but with longer maturity
 - Easier to renegotiate than public issues
 - Lower costs than public issues

Chapter 17

Dividends and Dividend Policy

Cash Dividends

Cash dividends reduce cash and retained earnings (and liquidating dividends may also reduce paid-in capital)

- **Regular cash dividend** – cash payments made directly to stockholders, usually each quarter
- **Extra cash dividend** – indication that the “extra” amount may not be repeated in the future
- **Special cash dividend** – similar to extra dividend, but definitely will not be repeated
- **Liquidating dividend** – some or all of the business has been sold

Dividend Payment

- **Declaration Date** – Board declares the dividend, and it becomes a liability of the firm
- **Ex-dividend Date**
 - Occurs two business days before date of record
 - If you buy stock on or after this date, you will not receive the dividend
 - Stock price generally drops by about the amount of the dividend
- **Date of Record** – Holders of record are determined, and they will receive the dividend payment
- **Date of Payment** – checks are mailed

It is advantageous to buy a stock on the day before the ex-dividend date.

if you bought the stock prior to the ex-dividend date, you would pay \$10 per share. This would entitle you to receive the \$1 dividend, which will be mailed on the payment date.

What is the value of your investment after the stock goes ex-dividend?

You have the \$1 dividend plus a share of stock that is now worth \$9. In a perfect world, this would result in a no-arbitrage opportunity.

However, you would owe taxes on the dividend received. Consequently, if the stock price falls by the full amount of the dividend, you are worse off because you will have the \$1 dividend + \$9 for the stock – taxes paid on the dividend < \$10.

Therefore, if the marginal investor is in a positive tax bracket (which is always the case), then the stock price should fall by less than the dividend amount to compensate the investor for the taxes that must be paid on the dividend. More information is provided in the IM.

Does Dividend Policy Matter?

- **Dividends matter** – the value of the stock is based on the present value of expected future dividends
- **Dividend policy may not matter**
 - **Dividend policy** is the decision to pay dividends versus retaining funds to reinvest in the firm
 - In theory, if the firm reinvests capital now, it will grow and can pay higher dividends in the future

Low Payout Please

- **Why might a low payout be desirable?**
 - Individuals in upper income tax brackets might prefer lower dividend payouts, given the immediate tax liability, in favor of higher capital gains with the deferred tax liability
 - **Flotation costs** – low payouts can decrease the amount of capital that needs to be raised, thereby lowering flotation costs
 - **Dividend restrictions** – debt contracts might limit the percentage of income that can be paid out as dividends

High Payout Please

- Why might a high payout be desirable?
 - **Desire for current income**
 - Individuals that need current income, i.e., retirees
 - Groups that are prohibited from spending principal (trusts and endowments)
 - **Uncertainty resolution** – no guarantee that the higher future dividends will materialize
 - **Taxes**
 - Dividend exclusion for corporations
 - Tax-exempt investors don't have to worry about differential treatment between dividends and capital gains

Dividends and Signals

- **Asymmetric information** – managers have more information about the health of the company than investors
- Changes in dividends convey information

- **Dividend increases**
 - Management believes it can be sustained
 - Expectation of higher future dividends, increasing present value
 - Signal of a healthy, growing firm
- **Dividend decreases**
 - Management believes it can no longer sustain the current level of dividends
 - Expectation of lower dividends indefinitely; decreasing present value
 - Signal of a firm that is having financial difficulties

Clientele Effect

- Some investors prefer **low dividend payouts** and will buy stock in those companies that offer **low** dividend payouts
- Some investors prefer **high dividend payouts** and will buy stock in those companies that offer **high** dividend payouts

Stock Repurchase

- Company buys back its own shares of stock
 - **Tender offer** – company states a purchase price and a desired number of shares
 - **Open market** – buys stock in the open market
- Similar to a cash dividend in that it returns cash from the firm to the stockholders
- This is another argument for dividend policy irrelevance in the absence of taxes or other imperfections

Real-World Considerations

- Stock repurchase allows investors to decide if they want the current cash flow and associated tax consequences
- Given our tax structure, repurchases may be more desirable due to the options provided stockholders
- The IRS recognizes this and will not allow a stock repurchase for the sole purpose of allowing investors to avoid taxes

Information Content of Stock Repurchases

- Stock repurchases send a positive signal that management believes the current price is low
- Tender offers send a more positive signal than open market repurchases because the company is stating a specific price
- The stock price often increases when repurchases are announced

Managements' View of Dividend Policy

- **Agree or Strongly Agree**
 - 93.8% Try to avoid reducing dividends per share
 - 89.6% Try to maintain a smooth dividend from year to year
 - 41.7% Pay dividends to attract investors subject to “prudent man” restrictions
- **Important or Very Important**
 - 84.1% Maintaining consistency with historic dividend policy
 - 71.9% Stability of future earnings
 - 9.3% Flotation costs to issue new equity

Stock Dividends

- Pay additional shares of stock instead of cash
- Increases the number of outstanding shares
- Small stock dividend
 - Less than 20 to 25%
 - If you own 100 shares and the company declared a 10% stock dividend, you would receive an additional 10 shares
- Large stock dividend – more than 20 to 25%

Stock Splits

- **Stock splits** – essentially the same as a stock dividend except expressed as a ratio
 - **For example**, a 2 for 1 stock split is the same as a 100% stock dividend
- Stock price is reduced when the stock splits
- Common explanation for split is to return price to a “more desirable trading range”

Quick Quiz

- **What are the different types of dividends, and how is a dividend paid?**
A dividend is generally considered to be a cash payment issued to the holders of company stock. These dividend types are:
 - **Cash dividend.** The cash dividend is by far the most common of the dividend types used. On the date of declaration, the board of directors resolves to pay a certain dividend amount in cash to those investors holding the company's stock on a specific date. The date of record is the date on which dividends are assigned to the holders of the company's stock.
 - **Stock dividend.** A stock dividend is an issuance by a company of its common stock to its common shareholders without any consideration. If the company issues less than 25 percent of the total number of previously outstanding

shares, then treat the transaction as a stock dividend. If the transaction is for a greater proportion of the previously outstanding shares, then treat the transaction as a stock split.

- **Property dividend.** A company may issue a non-monetary dividend to investors, rather than making a cash or stock payment. Record this distribution at the fair market value of the assets distributed. Since the fair market value is likely to vary somewhat from the book value of the assets, the company will likely record the variance as a gain or loss.
- **Scrip dividend.** A company may not have sufficient funds to issue dividends in the near future, so instead, it issues a scrip dividend, which is essentially a promissory note (which may or may not include interest) to pay shareholders at a later date. This dividend creates a note payable.
- **Liquidating dividend.** When the board of directors wishes to return the capital originally contributed by shareholders as a dividend, it is called a liquidating dividend and may be a precursor to shutting down the business. The accounting for a liquidating dividend is similar to the entries for a cash dividend, except that the funds are considered to come from the additional paid-in capital account.

Dividends are usually paid in the form of a dividend check, but they may also be paid in additional shares of stock. The standard practice for payment of dividends is a check that is usually mailed to stockholders a few days after the ex-dividend date, the date on which the stock starts trading without the previously declared dividend. The alternative method of paying dividends is in the form of additional shares of stock.

- **What is the clientele effect, and how does it affect dividend policy relevance?**

Clientele effect explains the movement in a company's stock price according to the demands and goals of its investors. These investor demands come in reaction to a tax, dividend or other policy change which affects the shares. The clientele effect first assumes that specific investors are preliminarily attracted to different company policies and when a company's policy alters, they will adjust their stock holdings accordingly. As a result of this adjustment, stock prices may fluctuate.

The following shows how it will effect on dividend policy:

- The clientele effect is the idea that the type of investors attracted to a particular kind of security will affect the price of a security when policies or circumstances change.
- Current clientele might choose to sell their stock if a firm changes its dividend policy and deviates considerably from the investor's preferences. Changes in policy can also lead to new clientele, whose preferences align with the firm's new dividend policy.
- In equilibrium, the changes in clientele sets will not lead to any change in stock price.
- The real world implication of the clientele effect lies in the importance of dividend policy stability, rather than the content of the policy itself.

- **What is the information content of dividend changes?**

- **What are stock dividends, and how do they differ from cash dividends?**

A stock dividend is a dividend payment made in the form of additional shares rather than a cash payout. Companies may decide to distribute this type of dividend to shareholders of record if the company's availability of liquid cash is in short supply. These distributions are generally acknowledged in the form of fractions paid per existing share, such as if a company issued a stock dividend of 0.05 shares for every single share held by existing shareholders.

A cash dividend is a payment made by a company out of its earnings to investors in the form of cash (check or electronic transfer). This transfers economic value from the company to the shareholders instead of the company using the money for operations. A stock dividend, on the other hand, is an increase in the number of shares of a company with the new shares being given to shareholders.

- **How are share repurchases an alternative to dividends, and why might investors prefer them?**

An alternative to cash dividends is to share repurchases. In a share repurchase, the issuing company purchases its own publicly traded shares, thus reducing the number of shares outstanding. The company then can either retire the shares, or hold them as treasury stock (non-circulating, but available for re-issuance). When a company repurchases its own shares, it reduces the number of shares held by the public. The reduction of the shares outstanding means that even if profits remain the same, the earnings per share increase. Repurchasing shares when a company's share price is undervalued benefits non-selling shareholders and extracts value from shareholders who sell.

For shareholders, the primary benefit is that those who do not sell their shares now have higher percent ownership of the company's shares and a higher price per share. If they choose repurchase, those who do choose to sell have done so at a price they are willing to sell it – unless there was a 'put' clause, in which case they had to sell because of the structure of the share, something they would have already known when they bought the shares.

Comprehensive Problem

- A company's stock is priced at \$50 per share, and it plans to pay a \$2 cash dividend.
 - Assuming perfect capital markets, what will the per share price be after the dividend payment?
 - If the average tax rate on dividends is 25%, what will the new share price be?

In perfect market, new price = \$50 - \$2 = \$48.

In imperfect market, new price = 48 + 2 * 0.25 = \$48.50

- Al owns 800 shares of The Good Life Co. The company recently issued a statement that it will pay a dividend per share of \$0.55 this year and a \$0.60 per share dividend next year. Al does not want any dividend income this year but does want as much dividend income as possible next year. Al earns 8.5 percent on his investments. Ignoring taxes, what will Al's total homemade dividend be next year?

Earning rate = 8.5%

dividend of current year = \$0.55

dividend for next year = \$0.60

Al does not want any dividend for the current year. So, current dividend earns 8.5% for one year

Homemade dividend income for next year = [(\$0.55 × 1.085) + \$0.60] × 800 = \$957.40

- ABC Mills has a market value equal to its book value. Currently, the firm has excess cash of \$1,200, other assets of \$5,800, and equity valued at \$3,750. The firm has 250 shares of stock outstanding and net income of \$420.

What will the new earnings per share be if the firm uses 25 percent of its excess cash to complete a stock repurchase?

Price per share = \$3,750 / 250 = \$15

Number of shares repurchased = (0.25 × \$1,200) / \$15 = 20 shares

New earnings per share = \$420 / (250 - 20) = \$1.83 per share