

Time Value of Money

1. Interest
 - a. Compounded Interest: interest earned on increasing principle (principle + previously earned interest)
 - i. Compounding: the frequency with which interest is added to the principle
 - ii. Discounting: finding how much a future value is worth today
 - iii. 4 Situations:
 1. FV of Lump Sum
 2. PV of Lump Sum
 3. FV of an Annuity
 4. PV of an Annuity
 - iv. Table Factors: (n) # of periods on left; (i) interest rate on top
 1. Adjustments:
 - (i): rate/compounds per year
 - (n): # of periods * # of compounds per year
 2. $FVF = (1 + i)^n$
 3. $PVF = 1 / (1 + i)^n$
 - b. Simple Interest: $PRT = I$ / interest only earned on original amount invested
2. Lump Sum
 - a. PVF and FVF are reciprocals
3. Future Value of a Lump Sum
 - a. How much will today's money be worth in some future time?
 - b. $FV = PV * Future Value Factor_{i,n}$
4. Present Value of a Lump Sum
 - a. How much is the future's money worth today?
 - b. $PV = FV * Present Value Factor_{i,n}$
5. Annuity
 - a. Annuity: series of equal payments received/paid with consistent time in between
 - i. Ordinary: payment at end of period
 1. Factors are as found in table
 - ii. Annuity Due: payment at beginning of period
 1. Factors are multiplied by $(1 + \text{interest rate used in table})$
 - b. Payment: value of each individual payment
 - c. PVAF and FVAF are not reciprocals
6. Future Value of an Annuity
 - a. How much are equal payments received at consistent interval worth at some point in the future?
 - b. $FVA = Payment * Future Value Annuity Factor_{i,n}$
7. Present Value of an Annuity
 - a. How much are equal payments received at consistent intervals worth today?
 - b. $PVA = Payment * Present Value Annuity Factor_{i,n}$
8. Apples to Apples
 - a. It is easiest to find PV of each alternatives to compare values

Debt Financing

1. Long Term Notes Payable
 - a. Liabilities with duration greater than 1 year
 - b. Mortgage: loan in exchange of property; made by pledging assets of collateral
 - i. Typically paid monthly (interest + repayment of principle)
 - ii. Initially recorded at face value (FV)
 - c. Amortization Table: table which assists in finding amount interest and amount repayment of principle in each payment

Date	Payment	Interest	Repayment of Principle	Loan Balance
Purchase				Face Value (X)
Payments	Given/Determined w TVoM	$I = X \cdot \text{IntRate} - \frac{\text{Monthly Interm. Payments}}{12}$	Payment - I = RoP	X - RoP

1. For last year's payment: make payment on principle equal balance and force out interest

2. Mortgage
 - a. Initially recorded at face value
 1. IS: N/A BS: Aup, Lup CF: Financing Inflow
 - x/x Cash \$X
 - Mortgage Payable \$X
 - b. Subsequent Payments require amortization work
 1. IS: Eup, NIdown BS: Adown, Ldown, Edown CF: IntExp Operating Outflow, MortPay Financing Outflow
 - x/x Interest Expense \$X
 - Mortgage Payable \$Y
 - Cash \$X+Y
 - c. Interest Paid: sum interest column in amortization table
 - d. Total Reduction of Principle: sum RoP column or subtract current Loan Balance from Face Value

3. Lease
 - a. Lease: a contract that specifies the terms under which the owner of an asset agrees to transfer the right to use the asset to another party; type dictated by FASB (Operating or Capital)
 - i. Operating Lease: Lessee assumes no risk of ownership
 1. Payments are rent expense
 2. End of contract, lessee has no rights
 3. Preferred b/c don't have to record liabilities (better financing positioning) - off balance sheet financing
 - ii. Capital Lease: lessee assumes purchase of asset
 1. Includes related liability and depreciation
 - b. Lessee: party granted the right to use property under terms of a lease
 - c. Lessor: owner of a property that is rented/leased to another party

4. Operating Lease
 - a. No initial journal entry
 - b. Subsequent Payments
 - x/x Rent Expense \$X
 - Cash \$X

5. Capital Lease
 - a. Leased asset and liability must appear on balance sheet at FV
 - i. Asset depreciates over time
 - ii. Liability must be amortized
 - iii. No residual value
 - b. Purchase
 - x/x Leased Asset \$X
 - Leased Liability \$X
 - c. Payment
 - x/x Interest Expense \$A
 - Leased Liability \$B
 - Cash \$A+B
 - d. End of Year Adjustment
 - x/x Depreciation Expense \$C
 - Accumulated Depreciation \$C

6. Ratios
 - a. Debt to Equity

$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Stockholder Equity}}$

 - i. % of fund from creditors vs stockholders; provides measure of protection if cannot pay (insolvent)
 - ii. High DTE = High risk to creditors → High interest rate
 - b. Times Interest Earned

$\text{Times Interest Earned Ratio} = \frac{\text{NI} + \text{Net Tax Expense} + \text{Interest Expense}}{\text{Interest Expense}}$

 - i. Shows company's ability to pay interest payments as they come due
 - ii. High TIE = better ability to pay when due → margin of safety provided to creditors

Equity Financing

1. Financing
 - a. Debt Financing: loan repayment; liable for amount of loan
 - i. Relationship with creditors ends at completion of loan
 - b. Equity Financing: money from investors/stockholders; don't have to repay
 - i. Rewarded by company's success
2. Equity
 - a. Contributed Capital: amounts owners have contributed through purchase of stock (Capital Stock); Preferred and Common accounted for in same ways
 - i. Preferred Stock
 1. Dividend preference: must be paid in full before common stockholders get any – if dividend paid
 - a. Usually cumulative: must be paid both current and prior years (dividends in arrears) unpaid dividends before common stockholders get anything
 - b. If unpaid: disclosed in FS as dividends in arrears (not liability)
 2. Dividend is a fixed percentage
 3. Typically do not have voting rights
 - ii. Common Stock
 1. Voting rights (BOD, significant managerial activities)
 2. Dividend rates determined by BOD (not set)
 3. Get dividends only after preferred stockholders have been paid in full
 - b. Retained Earnings: net income earned by a company not paid out as dividends
3. Stock
 - a. Par Value: monetary amount signed to each type of stock used only for accounting – not at all related to market value
 - i. Used to record transaction (stock account recorded at par)
 - ii. Excess sale over par goes to Paid-In Capital account
 1. Equity account when PIC-Preferred, PIC-Common, PIC-Treasury (later discussed)
 - b. Sale of Stock
 - i. Transactions involving company's own stock never affect NI
 - ii. IS: N/A BS: Aup, Eup CF: Financing Inflow

<i>x/x</i>	<i>Cash</i>		<i>\$X+Y</i>		
		<i>Common Stock</i>		<i>\$X</i>	
		<i>PIC-Common</i>		<i>\$Y</i>	
 - iii. Above example reflects a sale above par value; same process for preferred stock
 - c. Shares:
 - i. Authorized Shares: total number of share of stock that company is allowed to sell to the public
 - ii. Issued Shares: total number of shares sold to public
 - iii. Outstanding Shares: total number of shares in hands of shareholders
 - iv. *Issued Shares – Outstanding Shares = number of shares reacquired by company
 1. Called Treasury Stock
4. Treasury Stock
 - a. Properties
 - i. Contraequity
 - ii. No voting rights, no right to receive dividend
 - iii. Record at reacquisition cost, not par value
 - iv. No gains/losses ever recorded
 - v. IS: N/A BS: Adown, Edown CF: Financing Outflow
 - b. Why?
 - i. Reduces shares outstanding, increase market value
 - ii. Market price may be low
 - iii. Remove shares to avoid hostile takeover
 - iv. To use in employee stock options
 - v. Give cash back to existing shareholders
 - vi. Increase reported earnings per share
 - c. Reissuance Accounting
 - i. Reissuance Price > Reacquisition Price
 1. Record excess to PIC-Treasury (equity account)
 - a. This is not a gain, no effect on NI, part of Q
 2. Always remove treasury stock at reacquisition cost!

<i>x/x</i>	<i>Cash</i>		<i>\$X+Y</i>		
		<i>Treasury Stock</i>		<i>\$X</i>	
		<i>PIC-Treasury</i>		<i>\$Y</i>	
 - ii. Reissuance Price < Reacquisition Price
 1. Decrease PIC-Treasury to 0, then decrease RE

<i>x/x</i>	<i>Cash</i>		<i>\$X</i>		
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