Formula Sheet for FIN320

**Chapter Two:**

NWC = CA – CL

Earnings per share = NI / total shares outstanding

Dividends per share = total dividends / total shares outstanding

CFFA = OCF – NCS – Change in NWC

CFFA = CF to creditors + CF to shareholders

OCF = EBIT + depreciation – taxes

NCS = ending FA – beginning FA

NCS = ending NFA – beginning NFA + depreciation

Change in NWC = ending NWC – beginning NWC

CF to creditors = interest paid – net new borrowing

CF to shareholders = dividends paid – net new equity raised

Average tax rate = total taxes paid / total taxable income

|  |  |  |
| --- | --- | --- |
| **Corporate Tax Table** | | |
| **Over -** | **But not over -** | **Tax Rate** |
| $0 | 50,000 | 15% |
| 50,000 | 75,000 | 25% |
| 75,000 | 100,000 | 34% |
| 100,000 | 335,000 | 39% |
| 335,000 | 10,000,000 | 34% |
| 10,000,000 | 15,000,000 | 35% |
| 15,000,000 | 18,333,333 | 38% |
| 18,333,333 | -- | 35% |

**Chapter Three (ratios in alphabetical order – you must know how to common size financial statements):**

Book value per share = TE / number of shares outstanding

Cash coverage ratio = (EBIT + depreciation) / interest

Cash ratio = cash / CL

Current ratio = CA / CL

Days sales in inventory = 365 / inventory turnover

Days sales in receivables = 365 / receivables turnover

Debt ratio = TD / TA = (TA – TE) / TA

Debt-to-equity (D/E) ratio = TD / TE

Dividend payout ratio = Cash dividends / NI

Dividends per share = total dividends / total shares outstanding

Earnings per share = NI / total shares outstanding

EBITDA ratio = Enterprise value / EBITDA

Enterprise value = Total MV of the stock + BV of all liabilities – Cash

Equity multiplier = TA / TE = 1 + D/E ratio

Internal growth rate = (ROA x b) / [1 – (ROA x b)]

Inventory turnover = COGS / Inventory

Market-to-book ratio = Market value per share / BVPS

Price earnings (PE) ratio = Price per share / EPS

Price-sales ratio = Price per share / Sales per share

Profit margin = NI / Sales

Quick ratio = (CA – inventory) / CL

Receivables turnover = Sales / AR

Retention ratio (b) = Addition to RE / NI

Return on assets = NI / TA

Return on equity = NI / TE

Sustainable growth rate = (ROE x b) / [1 – (ROE x b)]

Times interest earned = EBIT / interest

Total asset turnover = Sales / TA

**DuPont Equations:**

Return on assets = PM x TAT

Return on equity = ROA x EM

Return on equity = PM x TAT x EM

**Chapter Four: (know how to use your calculator to solve TVM problems)**

FVt = PV + (PV x r x t)

PV = FVt / (1 + r)t

FVt = PV x (1 + r)t

r = (FVt / PV)(1/t) - 1

t = ln(FVt / PV) / ln(1 + r)

**Chapter Five: (know how to use your calculator to solve TVM problems)**

PVann = C x { [ 1 – ( 1 / (1 + r)t ) ] / r }

FVann = C x { [ (1 + r)t – 1 ] / r }

PVperp = C / r

PVann = C x { [ 1 – ((1 + g) / (1 + r)) t ] / (r – g) }

FVann = C x { [ (1 + r)t – (1 + g)t ] / (r – g) }

PVperp = C / (r – g)

PV = FV x e-rt

FV = PV x ert

APR = periodic rate x m

EAR = (1 + [quoted rate / m])m – 1

Rule of 72: r x t = 72

***Amortization:***

Interest paid = Interest rate x Beginning balance

Principal paid = Payment – Interest paid

Ending balance = Beginning balance – Principal paid

**Chapter Six: (know how to use your calculator to solve bond problems)**

Value of bond = { C x [ 1 – ( 1 / (1 + r)t ) ] / r } + { F / (1 + r)t }

YTM = CY + CGY

CY = annual coupon payment / current price

Fisher Effect Actual: (1 + R) = (1 + r) x (1 + h)

Fisher Effect Approximation: R = r + h

**Chapter Seven:**

Preferred: P0 = D / R

Common:

Constant growth dividend models:

Dt = D0 x (1 + g)t

P0 = [ D0 (1 + g) ] / (R – g)

P0 = D1 / (R – g)

Pt = [ Dt (1 + g) ] / (R – g)

Pt = Dt+1 / (R – g)

Pt = P0  x (1 + g)t

R = ( [ D0 (1 + g) ] / P0) + g

R = ( D1 / P0 ) + g

R = DY + CGY

Pt = Benchmark PE ratio x EPSt

Pt = Benchmark price-sales ratio x Sales per sharet

**Chapter Eight: (know how to use your calculator to solve for NPV and IRR)**

PI = PV of future cash flows / initial investment

PI = (NPV + initial investment) / initial investment

**Chapter Ten: (know how to use your calculator to solve for the historical average return and standard deviation)**

Coupon payment = (coupon rate x face value) / number of coupon payments per period

Investment income: dividends paid OR coupon payments

Capital gain (or loss) = ending price – beginning price

Total $ return = investment income + capital gain (or loss)

Dividend (stock) OR Current (bond) yield = investment income / beginning price

Capital gains yield = (ending price – beginning price) / beginning price

Total % return = (investment income + (ending price – beginning price)) / beginning price

Arithmetic Average Return = (R1 + R2 + R3 + … + RT) / T

Geometric Average Return = [(1 + R1) x (1 + R2) x … x (1 + RT)](1/T) - 1

**Chapter Eleven:**

Risk Premium = E(R) - Rf

### *Standalone asset:*

Expected return:

Variance:

### Standard deviation:

### *Portfolios:*

M = total number of assets in the portfolio

N = total number of states of the economy

wj = ($ amount invested in asset j) / (total $ amount of portfolio)

Rp,i = return of the portfolio in economic state i

Rj,i = return of asset j in economic state i

pi = probability of economic state i

*Return, variance, standard deviation of the portfolio:*

*Portfolio beta:*

*Reward to risk slope:*

*Security market line or capital asset pricing model:*

**Chapter Twelve:**

*Weighted average cost of capital:*

RE = (D1 / P0) + g

RE = {[D0 (1 + g)] /P0} + g

RE = Rf + [E(Rm) – R**f**] x 

RP = D / P0

RD: YTM on bond of similar risk and maturity

market value = (market price)(number of issues outstanding)

V = E + P + D

wE = E / V

wP = P / V

wD = D / V