

BOOK 4 – CORPORATE FINANCE, PORTFOLIO MANAGEMENT, AND ANALYSIS OF EQUITY INVESTMENTS

Readings and Learning Outcome Statements	3
Study Session 11 – Corporate Finance	10
Study Session 12 – Portfolio Management	82
Study Session 13 – Analysis of Equity Investments: Securities Markets	123
Study Session 14 – Analysis of Equity Investments: Industry and Company Analysis	160
Formulas	214
Index	219



If this book does not have a front and back cover, it was distributed without permission of Schweser, a Division of Kaplan, Inc., and is in direct violation of global copyright laws. Your assistance in pursuing potential violators of this law is greatly appreciated.

Required CFA Institute® disclaimer: "CFA® and Chartered Financial Analyst® are trademarks owned by CFA Institute. CFA Institute (formerly the Association for Investment Management and Research) does not endorse, promote, review, or warrant the accuracy of the products or services offered by Schweser Study Program®."

Certain materials contained within this text are the copyrighted property of CFA Institute. The following is the copyright disclosure for these materials: "Copyright, 2007, CFA Institute. Reproduced and republished from 2007 Learning Outcome Statements, Level 3 questions from CFA® Program Materials, CFA Institute *Standards of Professional Conduct*, and CFA Institute's *Global Investment Performance Standards* with permission from CFA Institute. All Rights Reserved."

These materials may not be copied without written permission from the author. The unauthorized duplication of these notes is a violation of global copyright laws and the CFA Institute Code of Ethics. Your assistance in pursuing potential violators of this law is greatly appreciated.

Disclaimer: The Schweser Notes should be used in conjunction with the original readings as set forth by CFA Institute in their 2007 *CFA Level 1 Study Guide*. The information contained in these Notes covers topics contained in the readings referenced by CFA Institute and is believed to be accurate. However, their accuracy cannot be guaranteed nor is any warranty conveyed as to your ultimate exam success. The authors of the referenced readings have not endorsed or sponsored these Notes, nor are they affiliated with Schweser Study Program.

FORMULAS

$$\text{IRR: } 0 = CF_0 + \frac{CF_1}{(1 + \text{IRR})^1} + \frac{CF_2}{(1 + \text{IRR})^2} + \dots + \frac{CF_n}{(1 + \text{IRR})^n} = \sum_{t=0}^n \frac{CF_t}{(1 + \text{IRR})^t}$$

$$\text{NPV} = CF_0 + \frac{CF_1}{(1 + k)^1} + \frac{CF_2}{(1 + k)^2} + \dots + \frac{CF_n}{(1 + k)^n} = \sum_{t=0}^n \frac{CF_t}{(1 + k)^t}$$

$$\text{payback period} = \text{full years until recovery} + \frac{\text{unrecovered cost at the beginning of the last year}}{\text{cash flow during the last year}}$$

$$\text{AAR} = \frac{\text{average net income}}{\text{average book value}}$$

$$\text{PI} = \frac{\text{PV of future cash flows}}{CF_0}$$

$$\text{WACC} = (w_d)[k_d(1 - t)] + (w_{ps})(k_{ps}) + (w_{ce})(k_{ce})$$

cost of common equity:

$$k_{ce} = \frac{D_1}{P_0} + g$$

$$k_{ce} = \text{RFR} + \beta[E(R_m) - \text{RFR}]$$

$$k_{ce} = \text{bond yield} + \text{risk premium}$$

$$\text{after-tax cost of debt} = k_d(1 - t)$$

$$\text{cost of preferred stock} = k_{ps} = D_{ps} / P$$

$$\text{DOL} = \frac{\% \Delta \text{EBIT}}{\% \Delta \text{sales}}$$

$$\text{DOL} = \frac{Q(P - V)}{Q(P - V) - F} = \frac{S - \text{TVC}}{S - \text{TVC} - F}$$

$$DFL = \frac{\% \Delta EPS}{\% \Delta EBIT}$$

$$DFL = \frac{EBIT}{EBIT - \text{interest}}$$

$$DTL = DOL \times DFL = \frac{Q(P - V)}{Q(P - V) - F - I} = \frac{S - VC}{S - VC - F - I} = \frac{\% \Delta EPS}{\% \Delta \text{sales}}$$

$$\text{breakeven point: } Q_{BE} = \frac{F}{P - V}$$

$$EPS \text{ after buyback} = \frac{\text{total earnings} - \text{after-tax cost of funds}}{\text{shares outstanding after buyback}}$$

$$\text{effective tax rate on dividends} = \text{corporate tax rate} + (1 - \text{corporate tax rate})(\text{individual tax rate})$$

$$\text{expected rate of return from expectational data: } E(R) = \sum_{i=1}^n P_i R_i$$

$$\text{expected rate of return from historical data: } \bar{R} = \frac{\sum_{t=1}^n R_t}{n}$$

$$\text{variance of returns from expectational data: } \text{variance} = \sigma^2 = \sum_{i=1}^n P_i [R_i - E(R)]^2$$

$$\text{variance of returns from historical data: } \text{variance} = \sigma^2 = \frac{\sum_{t=1}^N (R_t - \bar{R})^2}{n}$$

$$\text{covariance from expectational data: } \text{cov}_{1,2} = \sum_{i=1}^n \{P_i [R_{i,1} - E(R_1)][R_{i,2} - E(R_2)]\}$$

$$\text{covariance from historical data: } \text{cov}_{1,2} = \frac{\sum_{t=1}^n \{[R_{t,1} - \bar{R}_1][R_{t,2} - \bar{R}_2]\}}{n}$$

$$\rho_{1,2} = \frac{\text{Cov}_{1,2}}{\sigma_1 \times \sigma_2}$$

$$\sigma_p = \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \sigma_1 \sigma_2 \rho_{1,2}} \text{ or } \sqrt{w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \text{Cov}_{1,2}}$$

$$\text{equation of the CML: } E(R_P) = RFR + \sigma_P \left\{ \frac{[E(R_M) - RFR]}{\sigma_M} \right\}$$

total risk = systematic risk + unsystematic risk

$$\beta_i = \frac{\text{Cov}_{i,\text{mkt}}}{\sigma_{\text{mkt}}^2}$$

capital asset pricing model (CAPM): $E(R_i) = RFR + \beta_i [E(R_{\text{mkt}}) - RFR]$

zero-beta CAPM: $E(R_{\text{stock}}) = E(R_{\text{zero beta portfolio}}) + \beta_{\text{stock}} [E(R_{\text{market}}) - E(R_{\text{zero beta portfolio}})]$

margin call trigger prices:

$$\text{for margin purchases} = P_0 \left(\frac{1 - \text{initial margin}}{1 - \text{maintenance margin}} \right)$$

$$\text{for short sales} = P_0 \left(\frac{1 + \text{initial margin}}{1 + \text{maintenance margin}} \right)$$

$$\text{price-weighted index} = \frac{\text{sum of stock prices}}{\text{number of stocks}}$$

$$\text{market value-weighted index} = \frac{\sum [(\text{price}_{\text{today}}) (\text{number of shares outstanding})]}{\sum [(\text{price}_{\text{base year}}) (\text{number of shares outstanding})]} \times \text{base year index value}$$

$$\text{preferred stock valuation model: } P_0 = \frac{D_P}{k_P}$$

$$\text{one-period stock valuation model: } P_0 = \frac{D_1}{1 + k_e} + \frac{P_1}{1 + k_e}$$

$$\text{infinite period model: } P_0 = \frac{D_0 \times (1 + g)}{k_e - g} = \frac{D_1}{k_e - g}$$

$$\text{multistage model: } P_0 = \frac{D_1}{(1 + k_e)} + \frac{P_2}{(1 + k_e)^2} + \dots + \frac{D_n}{(1 + k_e)^n} + \frac{P_n}{(1 + k_e)^n}$$

where :

$$P_n = \frac{D_{n+1}}{k_e - g_c}$$

$$E(R) = (1 + RFR_{\text{real}})(1 + IP)(1 + RP) - 1$$

$$RFR_{\text{nominal}} = (1 + RFR_{\text{real}})(1 + IP) - 1$$

expected growth rate: $g = (\text{retention rate})(ROE)$

$$\text{earnings multiplier: } \frac{P_0}{E_1} = \frac{\frac{D_1}{E_1}}{k - g}$$

$$\text{expected EPS} = [(\text{sales})(EBITDA\%) - \text{depreciation} - \text{interest}](1 - \text{tax rate})$$

directional technical indicators:

$$\text{short interest ratio} = \frac{\text{outstanding short interest}}{\text{average daily volume on exchange}}$$

$$\text{uptick-downtick ratio} = \frac{\text{number of block uptick transactions}}{\text{number of block downtick transactions}}$$

“smart money” technical indicators:

$$\text{confidence index} = \frac{\text{quality bond yields}}{\text{average bond yields}}$$

$$\text{specialist short sale ratio} = \frac{\text{specialist's short sales}}{\text{total short sales on the NYSE}}$$

contrarian technical indicators:

$$\text{mutual fund ratio} = \frac{\text{mutual fund cash}}{\text{total fund assets}}$$

$$\text{investment advisor ratio} = \frac{\text{bearish opinions}}{\text{total opinions}}$$

$$\text{volume ratio} = \frac{\text{OTC volume}}{\text{NYSE volume}}$$

stock price and volume techniques:

$$\text{upside-downside volume ratio} = \frac{\text{volume of stocks that increased}}{\text{volume of stocks that declined}}$$

$$\text{relative strength} = \frac{\text{stock price}}{\text{market index value}}$$

$$\text{trailing P/E} = \frac{\text{market price per share}}{\text{EPS over previous 12 months}}$$

$$\text{leading P/E} = \frac{\text{market price per share}}{\text{forecast EPS over next 12 months}}$$

$$\text{P/V ratio} = \frac{\text{market value of equity}}{\text{book value of equity}} = \frac{\text{market price per share}}{\text{book value per share}}$$

where :

$$\begin{aligned} \text{book value of equity} &= \text{common shareholders' equity} \\ &= (\text{total assets} - \text{total liabilities}) - \text{preferred stock} \end{aligned}$$

$$\text{P/CF ratio} = \frac{\text{market value of equity}}{\text{cash flow}} = \frac{\text{market price per share}}{\text{cash flow per share}}$$

$$\text{P/S ratio} = \frac{\text{market value of equity}}{\text{total sales}} = \frac{\text{market price per share}}{\text{sales per share}}$$

$$\text{CF} = \text{net income} + \text{depreciation} + \text{amortization}$$

$$\text{adjusted CFO} = \text{CFO} + [(\text{net cash interest outflow}) \times (1 - \text{tax rate})]$$

INDEX

A

abnormal returns 146, 156
advance-decline line 197
after-tax cost of debt 34
analyst recommendations 147
anomalies 148
autocorrelation 146
automated report service 129
average accounting rate of return 17

B

bargaining power of buyers 183
bargaining power of suppliers 183
beta 112
bill-and-hold 206
block trading 129
block uptick-downtick ratio 197
bond market indexes 140
book value/market value ratios 148
borrowing 108
breadth of market 196
breakeven quantity of sales 46
bridge liquidity 126
business cycle 180
business risk 169

C

calendar studies 148
call markets 124
call money rate 127
capital appreciation 83
capital asset pricing model 35, 111
capital budgeting process 10
capital components 30
capital market line 106
capital market theory, assumptions of 106
capital preservation 83
CAPM. See capital asset pricing model
cash dividends 55
cash flow from operations 207
cash position of mutual funds 194
CFO. See cash flow from operations
cliente effect 62

CML. See capital market line
commission broker 126
commissions 129
common stock valuation 162
competitive bids 123
component costs of capital 30
composite stock-bond indexes 141
concentration ratio 181
confidence index 196
constant growth dividend valuation model 164
continuous markets 124
contrarian view 194
corporate governance 71
corporate investors 161
correlation 95, 99
cost of debt 34
cost of preferred stock 34
cost of retained earnings 35
country risk premium 169
covariance of rates of return 93
current income 83
cyclical company 187
cyclical stock 186, 187

D

debit balances in brokerage accounts 196
deceleration of growth and decline 181
declaration date 57
defensive stock 186
degree of financial leverage 44
degree of operating leverage 42
degree of total leverage 45
discounted payback method 17
display book 129
distribution 124
diversifiable risk 109
diversification benefits 99
dividend discount model 162
dividend initiation 64
dividend payout ratio 167
dividends received deduction 161
domestic equity indexes 140
double-taxation system 62
Dow Theory 197

E

earnings growth rate, g 169
earnings multiplier 187
earnings power 203
earnings surprises to predict returns 148
efficient capital market 145
efficient frontier 99, 100, 108
efficient market hypothesis 145, 192, 193
EMH. See efficient market hypothesis
estimated return 113
event studies 147
exchange market makers 126
exchange rate risk 169
ex-dividend date 57
expectational data 89
expected return 89, 91
external risk factors 168
externalities 11

F

FCFE. See free cash flow to equity
filter rules 146
financial leverage 46
financial risk 169
Financial Times Actuaries Share Indexes 136
firm analysis 161
firm-specific risk 109
floor brokers 126
foreign risk premium 169
fourth market 125
free cash flow to equity 207
frictionless markets 106
fundamental analysts 192

G

global bond indexes 141
global equity indexes 140
goodwill 205
graphs 198
growth company 186
growth stock 186

H

Herfindahl index 181
heterogeneous expectations 116
high-yield bond indexes 141
holder-of-record date 57
homogeneous expectations 106

I

imputation tax system 63
incremental cash flows 11
independent projects 12
index funds 149
indifference curves 88, 100
industry effects 160
industry life cycle 181
infinite period DDM 164
inflation 160
inflation premium 168
informational efficiency 147
informationally efficient capital market 145
initial margin 127
institutionalization of securities markets 128
internal efficiency 123
internal rate of return 15
internal risk factors 168
investment constraints 83
investment objectives 82
investment strategy 82
investment-grade bond indexes 141
investor credit balances in brokerage account 195
IRR. See internal rate of return

J

January Anomaly 148
jobbers 126

L

leading P/E ratio 203
legal and regulatory factors 84
lending 108
levered positions 108
limit order book 126
limit orders 126
liquidating dividends 55
liquidity 83, 123
liquidity risk 169
London Stock Exchange 126

M

macroanalysis 187
macroeconomic influences 160
maintenance margin 128
margin call 128
margin requirement 127
margin transactions 127

marginal cost of capital 30
market efficiency 145
market makers 126
market orders 126
market portfolio 108
marketability 123
Markowitz investors 89, 106
Markowitz portfolio 106
mature growth phase 181
microanalysis 187
monetary policy 160
moving averages lines 198
multistage dividend discount model 165
mutually exclusive projects 12

N

National Association of Securities Dealers Automated Quotation (NASDAQ) 125
national exchanges 124
National Market System 129
neglected firms effect 148
negotiated market 125
negotiated sales 123
net present value 13
new trading systems 129
New York Stock Exchange Index 136
nominal risk-free rate 168
nondiversifiable risk 109
NPV profile 20

O

objective standard 82
off-balance-sheet assets and liabilities 205
operating leverage 45
operating risk 42
opportunity costs 12
optimal portfolio 100
order-driven system 125
origination 124
over-the-counter 195

P

pairs trading 155
payback period 16
payment date 58
perfectly negatively correlated 95
perfectly positively correlated 95
pioneering phase 181
planning periods 116

policy statement 82
political risk 160
Porter's five competitive forces 183
portfolio management process 82
portfolio standard deviation formula 96
preferred stock value 161
price continuity 123
price to book value 204
price to cash flow 207
price to sales 205
price-earnings ratio (P/E) 148
price-versus market value-weighting 138
price-weighted index 135, 137, 138, 139
price-weighting bias 137
primary capital markets 124
private placements 123
profitability index 19
pure auction market 125

R

rapid accelerating growth phase 181
real risk-free rate 168
rebalance 82
regional exchanges 125
registered traders 126
regular dividends 55
relative strength 198
required return 113
retention rate 169
return objectives 82
return on margin trade 127
returns distribution 89
reverse stock splits 57
risk aversion 88, 89
risk bearing 124
risk premium 168
risk tolerance 83
risk variability 89
risk/return 89
risk-averse investor 100
risk-return tradeoff curve 98
rivalry among the existing competitors 183
role of the portfolio manager 149
runs tests 146

S

sales risk 42
secondary financial markets 124
security market indexes 135
security market line 111

Index

security market line, assumptions of 115
 semistrong-form efficient markets 146
 semistrong-form tests of the EMH 146
 share repurchase 58
 short interest 197
 short sale orders 126
 short sales by specialists 196
 signaling effect 64
 small firm effect 148¹
 smart money technicians 196
 SML. See security market line
 special dividends 55
 specialist 126
 speculative company 187
 speculative stock 186, 187
 split-rate corporate tax system 63
 stabilization and market maturity phase 181
 statistical tests for independence 146
 stock dividends 55
 stock index futures 196
 stock price volatility 129
 stock splits 56
 stop loss orders 126
 strong-form efficient markets 146
 strong-form tests of the EMH 147
 sunk costs 11
 super dot 129
 supernormal growth 165
 support and resistance levels 198
 sustainable growth 170
 systematic risk 109

T

tangible book value 205
 tax concerns 83
 taxation of dividends 61, 62
 T-bill-Eurodollar yield spread 196
 technical analysis 192
 technical indicators 194
 third market 125
 threat of new entrants 183
 threat of substitute products 183
 three-step approach to security valuation 160
 time horizon 83
 timely and accurate information 123
 Tokyo Stock Exchange (TSE) 126
 total leverage 46
 total return 83
 trading rule tests 146
 trailing P/E ratios 203

transaction costs 116
 types of orders 126

U

unique needs and preferences 84
 unique risk 109
 unlimited risk-free lending and borrowing 106
 unsystematic risk 109
 unweighted bias 137
 unweighted index 136
 uptick rule 127
 utility maximization 89

V

value chain 180
 Value Line 149
 Value Line enigma 147
 value-weighted index 136, 137
 value-weighting bias 137
 variance and standard deviation 91
 volume, importance of 197

W

WACC. See weighted average cost of capital
 weak-form of the EMH 145, 148
 weak-form tests of the EMH 146
 weekend effect 148
 weighted average cost of capital 30
 weighting 135

Z

zero-beta portfolio 116