

Solutions to Selected End-of-Chapter Problems

CHAPTER 1

None

CHAPTER 2

- 2 Net income = \$245,375;
Addition to RE = \$178,375
- 4 Average tax rate = 33.12%;
Marginal tax rate = 39%
- 6 \$1,360,000
- 8 \$95,000
- 10 \$475,000
- 14 Net income = \$201,500;
OCF = \$326,500
- 16 \$4,485
- 18 a. \$2,600
b. \$0
- 20 a. -\$58,000
b. \$95,000
- 22 a. \$1,836
b. \$6,076
c. -\$2,294
d. CFC = \$790; CFS = -\$3,084
- 28 b. 34%; 35%
c. 45.75%

CHAPTER 3

- 2 Equity multiplier = 1.75
ROE = 18.20%
Net income = \$163,800
- 4 \$8,758.11
- 6 10.80%
- 8 \$683.50
- 10 a. 6.29%
- 12 -11.25%; -\$29,358.86
- 14 23.14 days
- 16 8.82 times
- 20 \$50,710
- 22 -\$95,272

CHAPTER 4

- 2 a. \$4,477.12
b. \$5,397.31
c. \$8,017.84
- 4 8.10%; 8.26%; 12.64%; 9.01%
- 6 9.01 years; 18.01 years
- 8 -4.46%
- 10 \$3,624.75; \$2,154.99; \$3,264.75; \$3,697.98
- 12 @9%: \$35,971.48; \$33,062.04
@21%: \$23,432.61; \$24,870.87

- 14 \$416,666.67; 5.75%
- 16 9.95%; 8.09%; 14.78%; 17.14%
- 18 APR = 102.77%; EAR = 176.68%
- 20 APR = 1,733.33%; EAR = 313,916,515.69%
- 22 5.45%
- 24 49.53%
- 26 \$1,860,119.05
- 28 \$40,768.74
- 30 \$498,693.81
- 32 6.97%
- 34 \$2,568,989.11
- 36 118.19
- 38 \$435,777.30
- 40 \$19,150,500.91
- 42 \$6,027.02; 15.44%
- 44 \$146,607.22
- 46 \$14,750.77
- 48 At year 5: \$51,582.02
At year 3: \$42,266.80
Today: \$31,350.96
- 50 \$1,665.65
- 52 \$2,070; \$12,420
- 54 \$14,497.78
- 56 a. \$2,710,997.76
b. \$2,676,973.38
- 58 \$18,564.54
- 60 PV of lease = \$15,860.31
PV of purchase = \$15,042.16
Breakeven resale = \$17,960.75
- 62 EAR = 16.28%
- 64 11.22%
- 66 Refundable fee: APR = 7.61%; EAR = 7.88%
Nonrefundable fee: APR = 7.50%; EAR = 7.76%

CHAPTER 5

- 2 a. \$1,000
b. \$793.62
c. \$1,309.09
- 4 8.24%
- 6 5.45%
- 8 6.40%
- 10 8.48%
- 12 Current yield = 4.08%; YTM = 4.357%; 4/32
- 14 +2%: -3.59%; -18.40%
-2%: 3.76%; 25.10%

- 16 Current yield = 7.05%
YTM = 6.65%
Effective yield = 6.76%
- 18 \$824.67
- 20 25 years
- 24 a. 7.65%
b. \$920.53; 12.95%
- 26 \$42.10
- 28 \$5,318.46
- 30 \$183,190.94

CHAPTER 6

- 2 7.89%
- 4 \$46.40
- 6 \$4.13
- 8 5.05%
- 10 \$34.80
- 12 \$71.30
- 14 \$151.44
- 16 \$88.62
- 18 \$98.65
- 20 1,655 shares
- 22 \$2.91
- 24 \$4.19
- 26 a. \$68.18
b. \$70.96
c. \$68.18
- 28 a. \$44.64
b. \$46,059,524
c. \$47.93
- 29 a. \$81.82
b. \$94.08
- 30 W: Dividend yield = 7%
Capital gains yield = 10%
X: Dividend yield = 17%
Capital gains yield = 0%
Y: Dividend yield = 22%
Capital gains yield = -5%
Z: Dividend yield = 7.58%
Capital gains yield = 9.42%

CHAPTER 7

- 2 4.79 years; 6.85 years; Never
- 4 3.47 years; 4.12 years; Never
- 6 19.04%

- 8 16.79%; 13.82%
- 10 1.499; 1.453
- 12 a. 11.94%
d. -\$356.05; \$1,277.78
- 14 a. 1.326; 1.463
b. \$19,579.26; \$15,737.04
- 16 a. 1.62 years; 1.86 years
b. \$61,968.44; \$109,729.53
c. 23.34%; 21.95%
d. 20.49%
- 18 a. 1.58 years; 1.97 years
b. \$187,941.40; \$159,579.26
c. 34.40%; 21.45%
- 20 a. 2.46 years; 1.88 years
b. \$226,296.02; \$188,993.24
c. 16.24%; 22.25%
d. 11.76%
- 24 -\$319,209.66; Infinite
- 26 a. -\$33,333.33
b. 5.22%

CHAPTER 8

- 2 \$2,187.56
- 4 \$137,681.57
- 6 23.16%
- 8 \$1,585,052
- 10 -\$182,217.03; -\$180,021.05
- 12 -\$678,948.42; -\$882,452.65
- 14 -\$4,762,969; -\$4,627,659
- 16 \$25,483,333
- 18 \$2,210,526
- 20 -\$44,236.84; -\$45,647.21
- 24 -\$59,586.82
- 28 \$0.004509
- 32 -\$816.72; -\$726.78
- 34 \$4,498,422; 23.32%
- 36 \$14.25
- 38 \$219.61
- 41 \$455,048.08

CHAPTER 9

- 2 \$3,265,507; -\$1,818,404
- 4 22,947.56
- 6 Go to market = \$19,000,000
Test market = \$20,575,072

- 8 Got to market = \$19,800,000
Consumer research = \$19,594,737
- 10 9,408.71
- 12 \$7.26
- 14 3.91 years; \$2,112,168; 18.31%
- 16 $\Delta NPV/\Delta P = -\$100,346.33$
 $\Delta NPV/\Delta Q = -\$1,003.46$
- 18 a. \$98,687.64
b. \$217,199.41
- 20 a. 538.46
b. 1,372.58
- 22 \$66.76
- 24 a. -\$493,122.17
b. \$922,807.04
- 26 a. OCF = \$1,071,600
\$NPV = \$481,562.57
b. -\$2,972,830; \$3,935,955

CHAPTER 10

- 2 $R_D = 1.67\%$; $R_{CG} = 14.29\%$
- 4 a. \$15
b. 1.46%
c. -1.50%
- 6 $R_G = 2.62\%$; $R_C = 3.01\%$
- 8 a. 3.24%; 6.55%
b. 24.11%; 1.24%
c. -3.32%; 24.92%
- 10 a. 10.70%
b. 10.20%
- 12 40.85%
- 14 9.34%
- 16 7.48%
- 18 -8.70% to 32.20%; -29.20% to 52.80%
- 20 11.70%; 11.34%; 11.10%
- 22 11.67%; 8.83%
- 24 a. 7.75%; 9.30%
b. 2.48%; 3.12%
c. -1.40%
- 30 a. 32.35%; 22.75%
b. 2.11%; 11.63%
c. 10.55%; 1.64%

CHAPTER 11

- 2 12.62%
- 4 $X = \$3,888.89$; $Y = \$6,111.11$

- 6 Stock A: 7.80%; 2.71%
Stock B: 15.05%; 17.30%
- 8 12.55%
- 10 1.23
- 12 13.53%
- 14 10.89%
- 16 a. 9.10%
b. $X_S = .6522$
c. 0.56
d. $X_{Rf} = -100\%$
- 18 $E(R_V) = 13.75\%$; $E(R_Z) = 9.55\%$
- 20 8.80%; 10.15%
- 22 a. 12.11%; .04357; 20.87%
b. 8.31%
c. 9.01%; 8.73%; 5.21%; 5.05%
- 24 $-\$36,111.11$; 1.56
- 26 Stock J: 15.28%; 17.87%
Stock K: 8.21%; 1.22%
Covariance = -0.001024 ;
Correlation = -0.6273
- 30 a. 11.93%
b. 40.38%
- 32 14.18%
- 34 3.75%; 11.38%
- 36 a. 15.80%; 13.20%
b. 6.50%
- 38 a. $X_A = .6054$; $X_B = .3946$
b. 11.21%
c. $X_A = .5670$; $X_B = .4330$
d. .0657; 25.63%

CHAPTER 14

- 2 a. \$1.27; \$2.11; \$2.85
b. \$0.72; \$1.96; \$3.05
- 4 a. \$1.76; \$1.38
b. \$3.53; \$3.88
c. \$455,600
- 6 a. Plan I = \$2.06; Plan II = \$1.58;
All-equity = \$2.26
b. \$8,742; \$8,742
c. \$8,742
d. Plan I = \$1.24; Plan II = \$0.95; All-equity = \$1.35;
Breakeven = \$8,742
- 8 a. \$375.00
b. \$275.38
c. Sell 35 shares
- 10 \$4,068,750

- 12 a. 18.54%
b. 13.71%
c. 21.14%; 17.43%; 13.71%
- 14 a. \$249,166.67
b. \$291,166.67
- 16 Levered underpriced by \$178,000
- 18 a. \$85,583.33
b. \$100,560.42; \$115,537.50
c. \$256,750; \$171,166.67
- 20 a. \$161,000
b. \$161,000
c. \$123,000
d. \$32,200; \$24,600
e. \$6,400; \$5,716
- 22 a. Knight cash flow = \$10,100;
Veblen cash flow = \$11,450

CHAPTER 15

- 2 a. Debt issue = \$421,000; \$546,000
Equity issue = \$362,500; \$448,810
- 4 \$520,000
- 6 a. Steinberg: \$1,429,825; \$789,474
Dietrich: \$1,122,807; \$1,096,491
- 8 a. \$62,000,000
b. 11.94%
c. 4.18%
- 10 a. \$3,853,571
b. \$4,133,571
c. \$3,853,571; \$3,743,571

CHAPTER 16

- 2 a. 2,500 new shares
b. 6,250 new shares
- 4 a. \$51.60
b. \$74.78
c. \$60.35
d. \$150.50
e. 400,000; 276,000; 342,000; 137,143
- 6 7,590 shares; \$25.38
- 8 New capital surplus = \$2,363,400
- 10 a. \$91
b. \$96
c. 21,875
- 12 \$63,632.50
- 14 a. \$1,576,486.49
b. \$42.47
c. \$1,576,486.49; Sell 1,846.69 shares

- 16 a. \$1.86
b. \$2.13
- 20 a. 35%
b. 10.50%

CHAPTER 17

- 2 a. \$3
b. \$0
- 4 a. \$8.64
b. \$3.37
- 6 \$5.56
- 8 \$57.73
- 10 $C = \$5.55$; $P = \$2.73$
- 12 0.77; -0.23
- 14 \$202,488
- 16 \$9.17
- 18 \$85
- 20 \$40
- 22 a. Project A: Equity = \$4,422.58; Debt = \$12,177.42
Project B: Equity = \$3,378.97; Debt = \$13,751.03
- 24 a. Equity = \$8,150.81; Debt = \$34,949.19
b. Equity = \$6,147.90; Debt = \$36,952.10
c. Equity = $-\$2,002.91$; Debt = \$2,002.91
- 26 a. \$5.59
b. Buy .3750 shares, Borrow \$26.66
c. \$5.59
- 28 a. \$56.22
b. Buy .2951 ounces of gold, Borrow \$268.37
c. \$56.22
- 30 a. \$45,241.87
b. \$20,783.11
c. \$24,458.76; 35.75%
d. \$17,352.45; 21.17%
- 32 a. Equity = \$24,514,738; Debt = \$105,485,262
b. \$49.03
c. \$112,149,533
d. Equity = \$34,175,320; Debt = \$95,842,680;
 $P = \$68.35$

CHAPTER 18

- 2 \$1,700; \$6,350
- 4 a. Increase; Increase
b. Increase; No change
c. Decrease; Decrease
d. Decrease; Decrease
e. Decrease; No change
f. Increase; Increase
- 6 64.15 days; 28.14 days

- 8 a. \$309.00; \$297.00; \$336.00; \$324.30
b. \$282.00; \$309.00; \$297.00; \$336.00
c. \$291.00; \$305.00; \$310.00; \$332.10
- 10 a. \$306,666.67
b. \$425,714.29
c. \$306,642.86; \$322,607.14; \$318,000.00
- 14 27.86%
a. 44.86%
b. 15.89%
c. 34.31%
- 16 \$683,205.13; 9.3590 times
- 18 a. 3.44%
b. 7.49%
c. 7.40%
- 22 10.34%

CHAPTER 19

- 2 a. \$34
b. 1,333,333; \$2.55
c. \$32.87; \$1.13
d. \$34,000; \$34,000
- 4 \$3,000; $-\$1,000$
- 6 1,258,766
- 8 \$0; $-\$0.83$; $-\$2.50$
- 10 BVPS = \$23.21; Earnings₁ = \$12,100;
EPS₁ = \$1.40; P₁ = \$63.51
Old M/B = 3.25; New M/B = 2.74;
NPV = $-\$12,869,565$; NI = \$23,384,615
- 12 19.18%
- 14 a. \$19.33; \$4; \$7.67
b. \$23.20; \$8; \$3.80
- 18 \$68; \$7

CHAPTER 20

- 2 a. £100
b. £100
c. SF1.5599/£; £0.6411/SF
- 4 b. \$2.1471
- 6 Great Britain = 3.95%; Japan = 3.69%;
Switzerland = 3.69%
- 8 Poland 1.29% higher
- 10 Kr5.7761
- 12 b. -1.69%
- 14 \$72,202.92
- 16 a. Equity = \$10,833.33
b. Equity = \$9,285.71
c. Equity = \$11,304.35