# StockVal.docx Application to Stock Valuation of Time Value Relations

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## Part TK Technical analysis

### TK1 Find price that generates a buy according to a (1,20)-day moving average rule

The 20-day moving average share price for the company stock at the close of market yesterday was $35.25 . The share price 20 days ago was $43.25 . According to a trading rule that generates a signal when the share price crosses the 20-day moving average, what would be today’s cross-over price that generates a signal reversal?

{ANSWER: A ; xlADDRESS: stocks!$B$92 }

/\a. $34.83 b. $28.78 c. $38.31 d. $26.17 e. $31.66

### TK2 Find price that generates a buy according to a (1,N)-day moving average rule

The 20-day moving average share price for the company stock at the close of market yesterday was $27.00 . The share price 20 days ago was $32.50 . According to a trading rule that generates a signal when the share price crosses the 20-day moving average, what would be today’s cross-over price that generates a signal reversal?

{ANSWER: B ; xlADDRESS: stocks!$B$105 }

/\a. $32.32 b. $26.71 c. $29.38 d. $35.55 e. $24.28

### TK5a Find %Δ price that generates signal reversal according to a (1,N)-day moving average rule

At the market close for company stock yesterday the 45-day moving average was $30.00 and the closing share price $24.50 . The share price 45 days ago was $24.50 . The trader uses a rule that generates a signal when the current closing price crosses the 45-day moving average. Find today’s percentage change in price relative to yesterday’s close that would generate a signal reversal.

{ANSWER: E ; xlADDRESS: stocks!$B$525 }

/\a. 20.9% b. 25.3% c. 27.8% d. 19.0% e. 23.0%

### TK5b Find %Δ price and signal according to a (1,N)-day moving average rule

At the market close for company stock yesterday the 45-day moving average was $30.00 and the closing share price $24.50 . The share price 45 days ago was $24.50 . The trader uses a rule that generates a signal when the current closing price crosses the 45-day moving average. Find today’s percentage change in price relative to yesterday’s close and the new signal that would occur with a signal reversal.

{ANSWER: B ; xlADDRESS: stocks!$F$525 }

/\a. if the stock price moves 26.4% the signal becomes “buy”

/\b. if the stock price moves 23.0% the signal becomes “buy”

/\c. if the stock price moves 20.0% the signal becomes “sell”

/\d. if the stock price moves 23.0% the signal becomes “sell”

/\e. if the stock price moves 20.0% the signal becomes “buy”

### TK3 Find price that generates a buy according to a (2,20)-day moving average rule

At the close of market yesterday the 20-day and 2-day moving average share prices for the company stock were $26.00 and $28.25 , respectively. The share prices 20 and 2 days ago were $21.25 and $27.75 , respectively. According to a trading rule that generates a signal when the 2-day moving average crosses the 20-day moving average, what would be today’s cross-over stock price that generates a signal reversal?

{ANSWER: E ; xlADDRESS: stocks!$B$119 }

/\a. $19.40 b. $21.34 c. $17.64 d. $16.03 e. $23.47

### TK4 Find price that generates a buy according to a (2,N)-day moving average rule

At the close of market yesterday the 25-day and 2-day moving average share prices for the company stock were $29.00 and $25.75 , respectively. The share prices 25 and 2 days ago were $36.25 and $25.50 , respectively. According to a trading rule that generates a signal when the 2-day moving average crosses the 25-day moving average, what would be today’s cross-over stock price that generates a signal reversal?

{ANSWER: A ; xlADDRESS: stocks!$B$134 }

/\a. $31.63 b. $42.10 c. $46.31 d. $34.79 e. $38.27

## Part ST Simple applications of stock valuation models

### ST20 Find intrinsic value with zero dividends until time N and perpetuity thereafter

The stock for a start-up company probably will pay no dividends until exactly 8 years from today. At that time it will pay $6.80 per year forever. You assess the intrinsic value of the stock with a 17.4% discount rate. Find the stock’s intrinsic value today.

{ANSWER: B ; xlADDRESS: stocks!$B$430; CLUE: FV(intrinsic value) = $39.08 }

/\a. $11.56 b. $12.71 c. $9.55 d. $8.68 e. $10.51

### ST6 Find V given div(0), g, P(1), and r

A company you are interested in just declared their annual dividend of $1.80 . You expect the annual dividend next year will be larger by 6.8%, at which time you expect the stock could sell for $21 . What is the intrinsic value today that would provide you with a 13.6% annual rate of return from investing in the stock?

{ANSWER: E ; xlADDRESS: stocks!$B$206 }

/\a. $22.20 b. $18.34 c. $15.16 d. $16.68 e. $20.18

### ST11 Simple ROR given P(0), div(1), and P(1)

The company stock paid a dividend this morning of $3.25 and its current stock price is $94 . You think that a year from now the dividend will be $3.90 and the stock price will be $107 . Find the rate of return if you buy the stock now at the current price, and in one year you receive the expected dividend and then sell the stock at the expected price.

{ANSWER: D ; xlADDRESS: stocks!$B$80 }

/\a. 21.8% b. 19.8% c. 16.3% d. 18.0% e. 23.9%

### ST12 Find rate of return given lump-sum cash flows

A stock you are buying today promises no dividends for a long time. In exactly 10 years you expect the stock will pay its first annual dividend of $2.70 . At that time, you also believe that the stock could be sold for $48.00 . If today you can buy the stock for $13.56 , what is the expected annual rate of return on the stock investment?

{ANSWER: C ; xlADDRESS: stocks!$B$149 }

/\a. 9.6% b. 12.8% c. 14.1% d. 10.6% e. 11.7%

### ST21 Find ROR given P0, zero dividends until time N, and perpetuity thereafter

A stock you are buying today promises no dividends for a long time. In exactly 8 years you expect the stock will pay its first annual dividend of $8.00 which you expect will be paid annually forever. If today you can buy the stock for $36.70 , what is the expected annual rate of return on the stock investment?

{ANSWER: C ; xlADDRESS: stocks!$B$443 }

/\a. 7.3% b. 9.7% c. 10.7% d. 8.8% e. 8.0%

### ST23 Find preferred ROR given dividend and price

You notice that the local electric company yesterday paid a $5.60 annual dividend on its preferred stock. The current price of the stock is $60 . Find the promised rate of return for the preferred stock.

{ANSWER: D ; xlADDRESS: stocks!$B$468 }

/\a. 8.5% b. 7.7% c. 6.4% d. 9.3% e. 7.0%

### ST22 Find preferred V(0) given dividend, CD rate, and risk premium

The company preferred stock pays a $6.80 annual dividend. The local bank pays 3.6% interest (compounded annually) on 5-year CDs. You consider the preferred stock an attractive investment if its *ROR* is 100 basis points more than the CD rate. Find your assessment of the preferred stock intrinsic value.

{ANSWER: E ; xlADDRESS: stocks!$B$456; CLUES: r = 4.60% }

/\a. $178.87 b. $162.61 c. $134.39 d. $196.76 e. $147.83

### ST24 Find preferred risk premium and buy-or-sell given dividend, CD rate, P(0), and target risk premium

The company preferred stock yesterday paid $8.00 annual dividend and today’s stock price is $137.30 . The local bank pays 4.6% interest on CDs. You consider the preferred stock an attractive investment if its *ROR* is 175 basis points more than the CD rate. Find the actual risk premium and is this stock a *buy* or a *sell*?

{ANSWER: E ; xlADDRESS: stocks!$B$483; CLUES: target risk premium = 6.35%; intrinsic value = $125.98 }

/\a. the actual risk premium is 141 BP and the stock is a buy

/\b. the actual risk premium is 107 BP and the stock is a buy

/\c. the actual risk premium is 123 BP and the stock is a buy

/\d. the actual risk premium is 141 BP and the stock is a sell

/\e. the actual risk premium is 123 BP and the stock is a sell

### ST7 Find ror if preferred divyld reverts to normal after two years

The company preferred stock just yesterday paid its annual dividend of $3.25 per share. Today’s share price is $39.20 . You believe the dividend yield is abnormally high but that it will revert to its normal value of 4.80%. Your strategy is to buy the stock today and receive annual dividends for two years. Upon receiving the last dividend you expect the dividend yield will be normal, and your strategy is to sell the stock at that time. Compute the expected annual rate of return for the strategy.

{ANSWER: A ; xlADDRESS: stocks!$B$16 CLUES: price(2)= $67.71 }

/\a. 38.8% b. 29.1% c. 32.0% d. 42.6% e. 35.2%

### ST25 Find ROR if preferred divyld reverts to normal after N years

The company preferred stock just yesterday paid its annual dividend of $4.50 per share. Today’s share price is $60.00 . You believe the dividend yield is abnormally high but that it will revert to its normal value of 4.00%. Your strategy is to buy the stock today and receive annual dividends for 4 years. Upon receiving the last dividend you expect the dividend yield will be normal. Your strategy is to sell the stock at that time. Compute the expected annual rate of return for the strategy.

{ANSWER: B ; xlADDRESS: stocks!$B$497; CLUES: price(2)= $112.50 }

/\a. 25.4% b. 23.1% c. 21.0% d. 27.9% e. 19.1%

### ST5 Find dividend growth rate given div(0) and div(-N)

The company declared a dividend this morning of $3.10 . Exactly 10 years ago the dividend was $1.39 . What is the annual dividend growth rate?

{ANSWER: D ; xlADDRESS: stocks!$B$192 }

/\a. 12.2% b. 9.2% c. 10.1% d. 8.4% e. 11.1%

### ST18 Time series estimate of dividend growth rate, find divs(-1,-2)

Yesterday (year-end 2525) the company paid its annual dividend of $4.20 . The annual dividend history is:

year dividend

2521 $2.43

2522 $3.19

2523 $3.60

2524 $3.36

Plot the graph of dividends against time. Now assume that dividends grow smoothly in accordance with the constant exponential growth model, even though each year there may be random errors that on average equal zero. Compute the best estimate of the dividend growth rate. For the function that shows dividends growing smoothly, what are the fitted values for the dividends in years 2524 and 2525?

{ANSWER: B ; xlADDRESS: stocks!$B$404 CLUES: g = 12.15% }

/\a. fitted values for the dividends equal $3.22 in 2524 and $3.61 in 2525

/\b. fitted values for the dividends equal $3.71 in 2524 and $4.16 in 2525

/\c. fitted values for the dividends equal $4.26 in 2524 and $3.61 in 2525

/\d. fitted values for the dividends equal $4.26 in 2524 and $4.16 in 2525

/\e. fitted values for the dividends equal $3.22 in 2524 and $4.16 in 2525

*ST13 eExam.rtf*

year, dividend

2521, $1.19

2522, $1.43

2523, $1.67

2524, $1.78

### ST13 Time series estimate of dividend growth rate and V

Yesterday (year-end 2525) the company paid its annual dividend of $1.75 . You believe that the stock merits a buy recommendation if it returns 19.8% per year. Your estimate of intrinsic value assumes that dividends grow smoothly in accordance with the constant exponential growth model. The annual dividend history is:

year dividend

2521 $1.19

2522 $1.43

2523 $1.67

2524 $1.78

Find the best estimate of the dividend growth rate and intrinsic value.

{ANSWER: C ; xlADDRESS: stocks!$B$331 }

/\a. Intrinsic value equals $29.32 and the dividend growth rate is 12.0%

/\b. Intrinsic value equals $29.32 and the dividend growth rate is 10.4%

/\c. Intrinsic value equals $22.17 and the dividend growth rate is 10.4%

/\d. Intrinsic value equals $25.49 and the dividend growth rate is 12.0%

/\e. Intrinsic value equals $25.49 and the dividend growth rate is 10.4%

### ST19 Find V in simplest div/(r-g)

The Company dividend appears to grow smoothly at a constant exponential rate of 5.0%. Analysts forecast that next year’s dividend should equal $2.50 . For you to receive a 12.4% average annual rate of return, how much should you offer for the stock?

{ANSWER: C ; xlADDRESS: stocks!$B$510 }

/\a. $25.38 b. $23.07 c. $33.78 d. $30.71 e. $27.92

### ST3a Find ROR given dividend(0) in simplest setting for growth model

Yesterday the Company paid its annual dividend of $2.10 per share and today you wish to purchase the stock at today’s quoted price of $26.72 . You believe that the dividend growth rate is 10.7%. According to the dividend growth model, what is this stock's total expected rate of return?

{ANSWER: B ; xlADDRESS: stocks!$B$163 ; CLUES: div(1)=$2.32 }

/\a. 17.6% b. 19.4% c. 23.5% d. 16.0% e. 21.3%

### ST3b Find ROR given dividend(-1) in simplest setting for growth model

One year ago the Company paid its annual dividend of $1.90 per share and today you wish to purchase the stock at today’s quoted price of $26.72 . You believe that the dividend growth rate is 10.7%. According to the dividend growth model, what is this stock's total expected rate of return?

{ANSWER: B ; xlADDRESS: stocks!$B$163 ; CLUES: div(1)=$2.32 }

/\a. 17.6% b. 19.4% c. 23.5% d. 16.0% e. 21.3%

### ST3c Find ROR given ORdividend(0,-1) in simplest setting for growth model

Yesterday the Company paid its annual dividend of $2.10 per share and today you wish to purchase the stock at today’s quoted price of $26.72 . You believe that the dividend growth rate is 10.7%. According to the dividend growth model, what is this stock's total expected rate of return?

{ANSWER: B ; xlADDRESS: stocks!$B$163 ; CLUES: div(1)=$2.32 }

/\a. 17.6% b. 19.4% c. 23.5% d. 16.0% e. 21.3%

### ST9 Find ROR given div0, g, and V

The company yesterday paid their annual dividend of $5.00 and the share price was $111.10 . The company growth rate is 6.9%. Suppose the stock is always priced in accordance with the constant growth dividend valuation model. Find the stock’s annual total rate of return.

{ANSWER: A ; xlADDRESS: stocks!$B$44 }

/\a. 11.7% b. 8.8% c. 9.7% d. 10.6% e. 8.0%

### ST8 Find 1-year ror given g, div0, r, p/e, and convergence to next years V

The company just paid its annual dividend of $3.25 . You believe the dividend will grow perpetually at 6.0% per annum. Today’s price-to-earnings ratio is 9.2 and the payout ratio always equals 50%. You assess intrinsic value with a 13.9% discount rate. Find the one-year rate of return from buying the stock today and holding it one year, given that next year’s share price converges to next year’s intrinsic value.

{ANSWER: C ; xlADDRESS: stocks!$B$31; CLUES: price(0)= $59.80 ; div(1)= $3.45 ; V(1)= $46.22 }

/\a. -22.5% b. -15.4% c. -16.9% d. -18.6% e. -20.5%

### ST17 Find risk premium given div increase, div(0), rf, and P

You pick up the *Wall Street Journal* and see that riskless government securities are offering 4.0%. You read that the Company just increased their annual dividend by $0.71 cents so that today it is paying a $6.34 dividend per share. You also read that its share price is $246.19 . You believe the constant growth dividend valuation model applies perfectly to this properly valued stock. What is the implied risk premium that is earned from owning the stock; that is, by how much does the expected return on the stock exceed the riskless interest rate?

{ANSWER: D ; xlADDRESS: stocks!$B$386 }

/\a. 12.7% b. 9.5% c. 8.6% d. 11.5% e. 10.5%

### ST15 Find P given div0, r, and divyld

A share of stock just paid a $2.10 dividend. If the total return on the security is 10.1%, the expected dividend yield is 2.7%, and the stock is properly priced according to the dividend growth model, what should the stock be selling for today?

{ANSWER: B ; xlADDRESS: stocks!$B$358 }

/\a. $91.89 b. $83.53 c. $101.08 d. $69.04 e. $75.94

### ST16 Find and(V, r) given div0, div(-N), and divyld

A share of company stock just paid its annual dividend of $2.70 . Exactly 3 years ago the dividend was $2.33 . Your analyst tells you the stock's expected dividend yield is 2.9%. You believe the constant growth dividend valuation model applies perfectly to this properly valued stock. Find (i) the expected total rate of return and (ii) the stock’s current intrinsic value.

{ANSWER: D ; xlADDRESS: stocks!$B$372 }

/\a. the expected total rate of return is 7.9% and intrinsic value is $85.04

/\b. the expected total rate of return is 10.5% and intrinsic value is $85.04

/\c. the expected total rate of return is 9.1% and intrinsic value is $97.79

/\d. the expected total rate of return is 7.9% and intrinsic value is $97.79

/\e. the expected total rate of return is 9.1% and intrinsic value is $85.04

### ST14a Find r given div increase, div(0) payout, and p/e

The company just increased its annual dividend by $0.53 relative to last year, so that today’s dividend per share is $5.78 . Dividends for this company grow smoothly at a constant rate. The payout ratio is constant at 80%. The stock's price-to-earnings ratio today equals 17.2, and you believe the market properly values the stock. What is the expected total rate of return that the constant growth dividend valuation model implies?

{ANSWER: E ; xlADDRESS: stocks!$B$345 CLUES: g = 10.1% ; p(0) = $124.27 }

/\a. 12.6% b. 13.8% c. 11.4% d. 16.7% e. 15.2%

### ST14b Partition r given div increase, div(0) payout, and p/e

The company just increased its annual dividend by $0.53 relative to last year, so that today’s dividend per share is $5.78 . Dividends for this company grow smoothly at a constant rate. The payout ratio is constant at 80%. The stock's price-to-earnings ratio today equals 17.2, and you believe the market properly values the stock. Partition the expected total rate of return that the constant growth dividend valuation model implies into the leading dividend yield and capital gains yield.

{ANSWER: A ; xlADDRESS: stocks!$F$345 CLUES: g = 10.1% ; p(0) = $124.27 }

/\a. the dividend yield is 5.1% and capital gains yield is 10.1%

/\b. the dividend yield is 5.9% and capital gains yield is 10.1%

/\c. the dividend yield is 4.5% and capital gains yield is 8.8%

/\d. the dividend yield is 4.5% and capital gains yield is 10.1%

/\e. the dividend yield is 5.9% and capital gains yield is 8.8%

Multiple setup (ST2m)

The Company is expected to announce their annual dividend tomorrow. One year ago they paid a dividend of $2.60 , and 5 years ago they paid $1.95 . You believe that future dividends will grow by the same rate as past ones. You are aware that riskless government securities are yielding 5.2%, and you make an offer to purchase the stock so that you earn 7.3% above the riskless rate.

{xlADDRESS: Stocksl!R214C1 ; CLUES: g = 7.46%; div(1) = $3.00 }

### ST2am Find intrinsic value given dividend history and required ROR

How much is your offer price?

{ANSWER: D ; xlADDRESS: stocks!$B$222 }

/\a. $54.59 b. $79.92 c. $66.05 d. $60.04 e. $72.65

### ST2bm Find actual ROR on counteroffer given dividend history and required ROR

Due to market conditions, you must purchase the stock for $4.50 above your offer price. At this higher purchase price, what is your expected total rate of return?

{ANSWER: A ; xlADDRESS: stocks!$F$222 ; CLUES: purchase price = $64.54 }

/\a. 12.1% b. 13.3% c. 10.0% d. 9.1% e. 11.0%

### ST4a Find dividend(1) given price(1), growth rate, and ROR

You believe that if today you buy a share of Company stock and sell it in one year for $42.27 , your total rate of return should equal 17.5%. You expect share price movements will reflect a capital gains yield of 8.1%. Just yesterday the company paid its annual dividend. According to the constant dividend growth model, what dividend should you expect next year?

{ANSWER: D ; xlADDRESS: stocks!$B$178 ; CLUES: price(0) = $39.10 ; dividend(0) = $3.40 }

/\a. $3.04 b. $2.51 c. $3.34 d. $3.68 e. $2.76

### ST4b Find dividend(1) given price(0), growth rate, and ROR

You believe that if today you buy a share of Company stock for $39.10 , your total rate of return should equal 17.5%. You expect share price movements will reflect a capital gains yield of 8.1%. Just yesterday the company paid its annual dividend. According to the constant dividend growth model, what dividend should you expect next year?

{ANSWER: D ; xlADDRESS: stocks!$B$178 ; CLUES: price(1) = $42.27 ; dividend(0) = $3.40 }

/\a. $3.04 b. $2.51 c. $3.34 d. $3.68 e. $2.76

### ST4c Find dividend(1) given ORprice(0,1), growth rate, and ROR

You believe that if today you buy a share of Company stock and sell it in one year for $42.27 , your total rate of return should equal 17.5%. You expect share price movements will reflect a capital gains yield of 8.1% . Just yesterday the company paid its annual dividend. According to the constant dividend growth model, what dividend should you expect next year?

{ANSWER: D ; xlADDRESS: stocks!$B$178 ; CLUES: dividend(0) = $3.40 }

/\a. $3.04 b. $2.51 c. $3.34 d. $3.68 e. $2.76

### ST4d Find ORdividend(0,1) given ORprice(0,1), growth rate, and ROR

You believe that if today you buy a share of Company stock and sell it in one year for $42.27 , your total rate of return should equal 17.5%. You expect share price movements will reflect a capital gains yield of 8.1%. Just yesterday the company paid its annual dividend. According to the constant dividend growth model, what dividend was paid yesterday?

{ANSWER:B ; xlADDRESS: stocks!$F$178 ; CLUES: dividend(0) = $3.40 }

/\a. $3.74 b. $3.40 c. $3.09 d. $4.11 e. $4.53

### ST1a Find intrinsic value given dividend(0) in simplest setting for growth model

Yesterday the Company paid its annual dividend of $3.70 per share and today you wish to purchase the stock at today’s quoted price of $54.44 . You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. According to the dividend growth model, what is this stock's intrinsic value?

{ANSWER: E ; xlADDRESS: stocks!$B$238 ; CLUES: div(1)=$4.01 }

/\a. $36.50 b. $30.16 c. $33.18 d. $27.42 e. $40.15

### ST1b Find AND(intrinsic value, inference) given dividend(0) in simplest setting for growth model

Yesterday the Company paid its annual dividend of $3.70 per share and today you wish to purchase the stock at today’s quoted price of $54.44 . You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. If also you believe the stock is valued according to the dividend growth model, which statement is most consistent with your beliefs?

{ANSWER: A ; xlADDRESS: stocks!$F$238 ; CLUES: div(1)=$4.01 }

/\a. Intrinsic value is $40.15 and the share is overvalued

/\b. Intrinsic value is $40.15 and the share is undervalued

/\c. Intrinsic value is $46.17 and the share is overvalued

/\d. Intrinsic value is $53.09 and the share is undervalued

/\e. Intrinsic value is $46.17 and the share is undervalued

### ST1c Find AND(%misvaluation, inference) given dividend(0) in simplest setting for growth model

Yesterday the Company paid its annual dividend of $3.70 per share and today you wish to purchase the stock at today’s quoted price of $54.44 . You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. If also you believe the stock is valued according to the dividend growth model, which statement is most consistent with your beliefs?

{ANSWER: A ; xlADDRESS: stocks!$J$238 ; CLUES: div(1)=$4.01 }

/\a. The stock price is 35.6% overvalued relative to intrinsic value

/\b. The stock price is 31.0% overvalued relative to intrinsic value

/\c. The stock price is 40.9% overvalued relative to intrinsic value

/\d. The stock price is 35.6% undervalued relative to intrinsic value

/\e. The stock price is 31.0% undervalued relative to intrinsic value

### ST1d Find intrinsic value given dividend(0), payout, and p/e in growth model

Yesterday the Company paid its annual dividend of $3.70 per share, its payout ratio always is 50% (= dividendst ÷ net incomet), and today you wish to purchase the stock while its price-to-earnings ratio (= sharepricet ÷ earnings per sharet) is 7.36. You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. If also you believe the stock is valued according to the dividend growth model, which statement is most consistent with your beliefs?

{ANSWER: E ; xlADDRESS: stocks!$B$238 ; CLUES: div(1)=$4.01 }

/\a. $36.50 b. $30.16 c. $33.18 d. $27.42 e. $40.15

### ST1e Find AND(intrinsic value, inference) given dividend(0), payout, and p/e for growth model

Yesterday the Company paid its annual dividend of $3.70 per share, its payout ratio always is 50% (= dividendst ÷ net incomet), and today you wish to purchase the stock while its price-to-earnings ratio (= sharepricet ÷ earnings per sharet) is 7.36. You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. If also you believe the stock is valued according to the dividend growth model, which statement is most consistent with your beliefs?

{ANSWER: A ; xlADDRESS: stocks!$F$238 ; CLUES: div(1)=$4.01 }

/\a. Intrinsic value is $40.15 and the share is overvalued

/\b. Intrinsic value is $40.15 and the share is undervalued

/\c. Intrinsic value is $46.17 and the share is overvalued

/\d. Intrinsic value is $53.09 and the share is undervalued

/\e. Intrinsic value is $46.17 and the share is undervalued

### ST1f Find AND(%misvaluation, inference) given dividend(0), payout, and p/e for growth model

Yesterday the Company paid its annual dividend of $3.70 per share, its payout ratio always is 50% (= dividendst ÷ net incomet), and today you wish to purchase the stock while its price-to-earnings ratio (= sharepricet ÷ earnings per sharet) is 7.36. You believe that the dividend growth rate is 8.5%. You believe that a fair total rate of return for this stock is 18.5%. If also you believe the stock is valued according to the dividend growth model, which statement is most consistent with your beliefs?

{ANSWER: A ; xlADDRESS: stocks!$J$238 ; CLUES: div(1)=$4.01 }

/\a. The stock price is 35.6% overvalued relative to intrinsic value

/\b. The stock price is 31.0% overvalued relative to intrinsic value

/\c. The stock price is 40.9% overvalued relative to intrinsic value

/\d. The stock price is 35.6% undervalued relative to intrinsic value

/\e. The stock price is 31.0% undervalued relative to intrinsic value

### ST10 Comparison to peer group

Suppose the company stock price is $63 , earnings per share is $2.38 , operating cash flow per share is $3.37 , and book value per share is $18.90 . For a carefully constructed peer group you find the following average multiples: the price-to-earnings ratio is 31, the price-to-cash flow ratio is 16; the price-to-book is 3.6. Compare the company and peer group multiples and, assuming the peers are virtual clones of the company, make inferences about the company share price.

{ANSWER: C ; xlADDRESS: stocks!$B$66 }

/\a. comparison of price-to-earnings ratios makes the company seem relatively overvalued

/\b. comparison of price-to-cash flow ratios makes the company seem relatively undervalued

/\c. comparison of price-to-book ratios makes the company seem relatively undervalued

/\d. Two choices, B and C, are correct

/\e. None of the A-B-C choices are correct

## Part SV Stock valuation and natural growth rates

### SV1a Find intrinsic value given sustainable growth and retained earnings

The Company’s total assets at year-end 2525 equal $6,200 and are financed by debt of $2,300 and stockholder’s equity of $3,900 (100 shares outstanding). Their sales for year 2525, $11,160 , yielded a net profit margin (= net income ÷ sales) of 3.20%; the payout ratio (= dividends ÷ net income) always is 50%. The price-to-earnings ratio at year-end 2525 is 10.11. For the foreseeable future, the company intends to operate at their sustainable growth rate. If you assess the share’s intrinsic value by using a 10.5% discount rate, what is the share’s intrinsic value?

{ANSWER: D ; xlADDRESS: stocks!$B$257 ; CLUES: g = 4.80% ; total dividends = $178.56 }

/\a. $27.12 b. $24.66 c. $29.84 d. $32.82 e. $22.42

### SV1b Find AND(intrinsic value, shareprice) given sustainable growth and retained earnings

The Company’s total assets at year-end 2525 equal $6,200 and are financed by debt of $2,300 and stockholder’s equity of $3,900 ( 100 shares outstanding). Their sales for year 2525, $11,160 , yielded a net profit margin (= net income ÷ sales) of 3.20%; the payout ratio (= dividends ÷ net income) always is 50%. The price-to-earnings ratio at year-end 2525 is 10.11. For the foreseeable future, the company intends to operate at their sustainable growth rate. If you assess the share’s intrinsic value by using a 10.5% discount rate, which statement is most accurate?

{ANSWER: C ; xlADDRESS: stocks!$F$257 ; CLUES: g = 4.80% ; total dividends = $178.56 }

/\a. Intrinsic value is $32.82 and the shareprice is $31.39

/\b. Intrinsic value is $43.40 and the shareprice is $36.10

/\c. Intrinsic value is $32.82 and the shareprice is $36.10

/\d. Intrinsic value is $37.74 and the shareprice is $36.10

/\e. Intrinsic value is $43.40 and the shareprice is $31.39

### SV1c Find AND(intrinsic value, shareprice, inference) given sustainable growth and retained earnings

The Company’s total assets at year-end 2525 equal $6,200 and are financed by debt of $2,300 and stockholder’s equity of $3,900 (100 shares outstanding). Their sales for year 2525, $11,160 , yielded a net profit margin (= net income ÷ sales) of 3.20%; the payout ratio (= dividends ÷ net income) always is 50%. The price-to-earnings ratio at year-end 2525 is 10.11. For the foreseeable future, the company intends to operate at their sustainable growth rate. If you assess the share’s intrinsic value by using a 10.5% discount rate, which statement is most accurate?

{ANSWER: C ; xlADDRESS: stocks!$F$257 ; CLUES: g = 4.80% ; total dividends = $178.56 }

/\a. Intrinsic value is $32.82 and the shareprice is $31.39 , so the share is overvalued

/\b. Intrinsic value is $43.40 and the shareprice is $36.10 , so the share is overvalued

/\c. Intrinsic value is $32.82 and the shareprice is $36.10 , so the share is overvalued

/\d. Intrinsic value is $37.74 and the shareprice is $36.10 , so the share is overvalued

/\e. Intrinsic value is $43.40 and the shareprice is $31.39 , so the share is overvalued

### SV1d Find AND(intrinsic value, inference) given sustainable growth and retained earnings

The Company’s total assets at year-end 2525 equal $6,200 and are financed by debt of $2,300 and stockholder’s equity of $3,900 ( 100 shares outstanding). Their sales for year 2525, $11,160 , yielded a net profit margin (= net income ÷ sales) of 3.20%; the payout ratio (= dividends ÷ net income) always is 50%. The price-to-earnings ratio at year-end 2525 is 10.11. For the foreseeable future, the company intends to operate at their sustainable growth rate. If you assess the share’s intrinsic value by using a 10.5% discount rate, which statement is most accurate?

{ANSWER: B ; xlADDRESS: stocks!$J$257 ; CLUES: g = 4.80% ; total dividends = $178.56 }

/\a. Intrinsic value is $28.54 and the share is overvalued

/\b. Intrinsic value is $32.82 and the share is overvalued

/\c. Intrinsic value is $28.54 and the share is undervalued

/\d. Intrinsic value is $37.74 and the share is overvalued

/\e. Intrinsic value is $37.74 and the share is undervalued

### SV2a Find intrinsic value given sustainable growth and return-on-equity

The Company just paid a dividend of $0.80 per share. The Company offers a 19.40% return on equity (= *Net incomet* ÷ *Stockholders equityt* ), a 40% payout ratio (= dividends ÷ net income), and equity investors require a 19.8% rate of return. The Company always operates at their sustainable growth rate and successfully holds constant all relevant financial ratios. What is the share’s intrinsic value?

{ANSWER: B ; xlADDRESS: stocks!$B$273 ; CLUES: g = 13.17% }

/\a. $11.29 b. $13.66 c. $10.26 d. $9.33 e. $12.42

### SV2b Find AND(intrinsic value, inference) given sustainable growth and return-on-equity

The Company just paid a dividend of $1.20 per share and the dividend yield (= dividend ÷ shareprice) is 1.91%. The Company offers a 14.10% return on equity (= *Net incomet* ÷ *Stockholders equityt* ), a 60% payout ratio (= dividends ÷ net income), and equity investors require a 8.4% rate of return. The Company always operates at their sustainable growth rate and successfully holds constant all relevant financial ratios. Which statement is most accurate?

{ANSWER: A ; xlADDRESS: stocks!$F$273 ; CLUES: g = 5.98% ; shareprice = $62.99 }

/\a. Intrinsic value is $52.49 and the share is overvalued

/\b. Intrinsic value is $60.36 and the share is undervalued

/\c. Intrinsic value is $45.64 and the share is undervalued

/\d. Intrinsic value is $45.64 and the share is overvalued

/\e. Intrinsic value is $52.49 and the share is undervalued

### SV3a Find intrinsic value given sustainable growth and DuPont

The Company just announced earnings per share of $3.30 , which means that their price to earnings ratio is 11.80. The Company has an asset turnover ratio (= *Salest ÷ Total assetst*) of 3.16, a net profit margin (= net income ÷ sales) of 3.5%, a debt ratio (= total debt ÷ total assets) of 35%, and a payout ratio (= dividends ÷ net income) of 40%. The Company always operates at their sustainable growth rate and successfully holds constant all relevant financial ratios. You would like to invest in the stock such that you’ll get a 15.9% total rate of return. What is your assessment of the stock’s intrinsic value?

{ANSWER: A ; xlADDRESS: stocks!$B$293; CLUES return on equity = 17.02% ; sustainable growth rate = 11.37% ; shareprice = $38.94 }

/\a. $32.45 b. $39.26 c. $35.70 d. $47.51 e. $43.19

### SV3b Find AND(intrinsic value, inference) given sustainable growth and DuPont

The Company just announced earnings per share of $3.30 , which means that their price to earnings ratio is 11.80. The Company has an asset turnover ratio (= *Salest ÷ Total assetst*) of 3.16, a net profit margin (= net income ÷ sales) of 3.5%, a debt ratio (= total debt ÷ total assets) of 35%, and a payout ratio (= dividends ÷ net income) of 40%. The Company always operates at their sustainable growth rate and successfully holds constant all relevant financial ratios. You would like to invest in the stock such that you’ll get a 15.9% total rate of return. Which statement is most accurate?

{ANSWER: A ; xlADDRESS: stocks!$F$293 ; CLUES return on equity = 17.02% ; sustainable growth rate = 11.37% ; shareprice = $38.94 }

/\a. Intrinsic value is $32.45 and the share is overvalued

/\b. Intrinsic value is $24.54 and the share is undervalued

/\c. Intrinsic value is $24.54 and the share is overvalued

/\d. Intrinsic value is $28.22 and the share is overvalued

/\e. Intrinsic value is $32.45 and the share is undervalued

Multiple setup (SV4m)

The Company’s total assets at year-end 2525 equal $2,500 and are financed by debt of $1,400 and stockholder’s equity of $1,100 (190 shares outstanding). Their sales for year 2525, $7,750 , yielded a net profit margin (= net income ÷ sales) of 2.20%; the payout ratio (= dividends ÷ net income) always is 40%. The price-to-earnings ratio at year-end 2525 is 7.8. For the foreseeable future, the company intends to operate at their sustainable growth rate. You assess the share’s intrinsic value by using a 17.6% discount rate.

{xlADDRESS: stocks!R301C1 ; CLUES: current intrinsic value = $5.39 ; next dividend = $0.40 ; g = 10.25% }

### SV4am Find intrinsic value given sustainable growth, retained earnings, and p/e

What is the share’s intrinsic value today, 12/31/2525?

{ANSWER: B ; xlADDRESS: stocks!$B$314 }

/\a. $4.90 b. $5.39 c. $3.68 d. $4.45 e. $4.05

### SV4bm Find AND(intrinsic value, inference) given sustainable growth, retained earnings, and p/e

Which statement about the share’s intrinsic value today, 12/31/2525, is most accurate?

{ANSWER: C ; xlADDRESS: stocks!$F$314 }

/\a. Intrinsic value is $5.39 and the share is undervalued

/\b. Intrinsic value is $6.20 and the share is overvalued

/\c. Intrinsic value is $5.39 and the share is overvalued

/\d. Intrinsic value is $7.12 and the share is overvalued

/\e. Intrinsic value is $7.12 and the share is undervalued

### SV4cm Find intrinsic value(1) given sustainable growth, retained earnings, and p/e

Perhaps you’ll buy the share today with the expectation that one year from now the shareprice will converge to its intrinsic value of 12/31/2526. What shareprice do you expect on 12/31/2526?

{ANSWER: D ; xlADDRESS: stocks!$J$314 }

/\a. $8.70 b. $7.19 c. $7.91 d. $5.94 e. $6.53

### SV4dm Find holding period ROR given sustainable growth, retained earnings, and p/e

Suppose you buy the share today at its market price of 12/31/2525. You hold the stock until 12/31/2526, at which time you receive next year’s dividend. Also, suppose the market shareprice has converged to its intrinsic value of 12/31/2526. What is the one-year rate-of-return from investing in the share?

{ANSWER: D ; xlADDRESS: stocks!$N$314 }

/\a. 31.4% b. 41.5% c. 36.1% d. 47.8% e. 54.9%

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