Equity Valuation

Lecture 5

Prepared by Dr. Walaa Mohamed

MGM 237
Introduction to Finance

جامعة الجميع الذكية
EVERYONE`S SMART UNIVERSITY

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

LO 10.1 Top-down approach & Bottom-up approach.

LO 10.2 Present value models

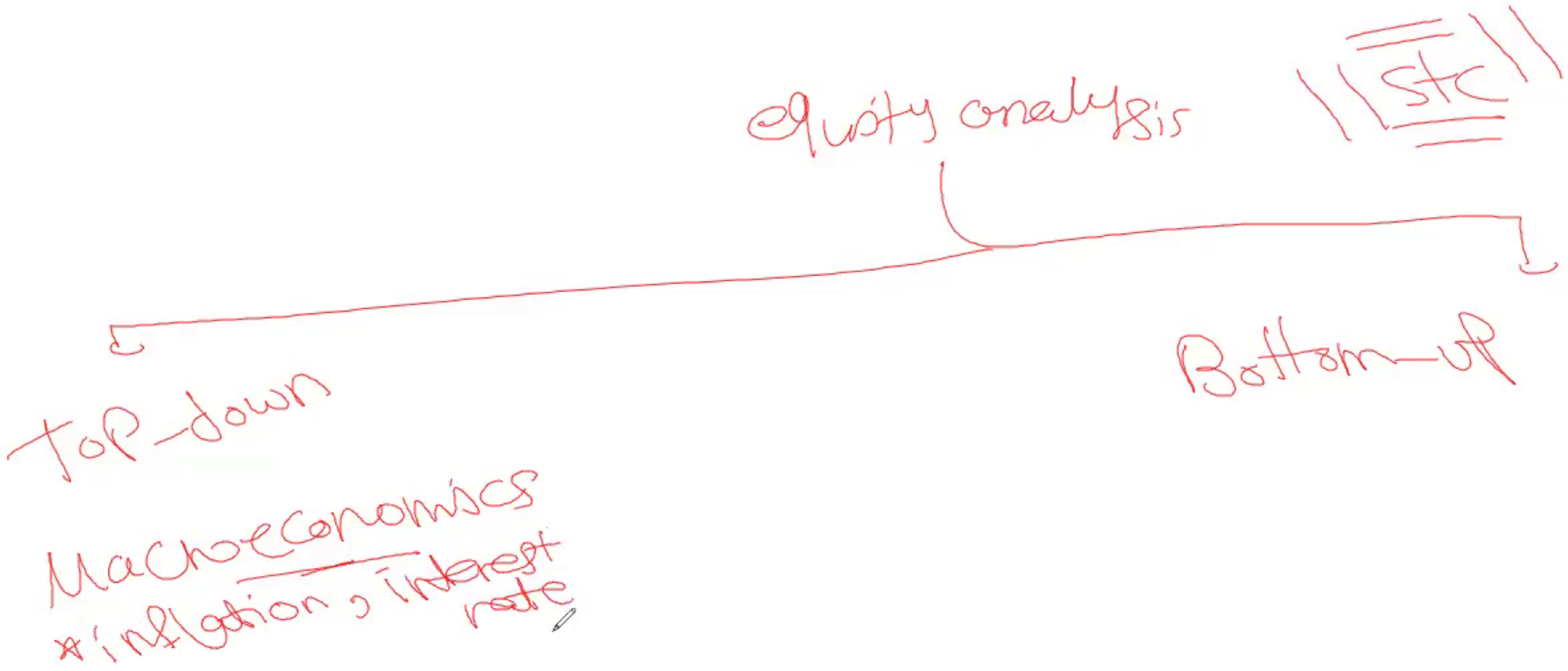
LO 10.3 Risk in Stock Valuation

LO 10.4 Valuation and the Financial Environment.

LO 10.5 Industry and Competition


STC


stc


Equity analysis
Top-down
Bottom-up
Macroeconomics
* inflation, interest rate

equity analysis



Top-down

Macroeconomics

* inflation, interest rate, commodities prices

* Sec

Bottom-up

equity analysis



Top-down

1. Macroeconomics
   - inflation, interest rate, commodities prices
2. Sector "Medical"
   - industries (hospitals, Pharma...)

Bottom-up

equity analysis

STC

Top-down

1. Macroeconomics
   * inflation, interest rate, commodities prices
2. Sector "Medical"
3. Industries (Hospitals, Pharma)
4. Companies

Bottom-up

Equity analysis

STC

Top-down

1. Macroeconomics
   * inflation, interest rate, commodities prices
2. Sector "Medical"
3. Industries (Hospitals, Pharma)
4. Companies (Growth, EBIT, EBITDA)

Bottom-up

1. Companies

equity analysis



top-down

1. Macroeconomics
   * inflation, interest rate, commodities prices
2. sector "Medical"
3. industries (hospitals, Pharma)
4. companies (Growth, EBIT, Ebitda)

Bottom-up

1. Companies (sh, dbt, Ebitda)
2. Industry
3. Sector
4. Macroeconomics

Equity analysis

STC

Top-down تحليل كلي

1. Macroeconomics
   - inflation, interest rate, commodities prices
2. Sector "Medical"
3. Industries (Hospitals, Pharma)
4. Companies (Growth, EPS, EV/EBIT)

Bottom-up

1. Companies (sh, dbt, Equity)
2. Industry
3. Sector
4. Macroeconomics



Market value of stock = $10

intrinsic value

fair

= fundamental

stc

* Market value of stock = $10

* intrinsic value → max. price = $8
  = fair
  = fundamental

int. value < Market

stc

* Market value of stock = $10
* intrinsic value → next. price = $8
  fair //
  = fundamental //

Market value > int. value
int. value < Market value
overvalued

Market correction

stc

* Market value of stock = $10

$4 - 2

* intrinsic value → next price =

= fair ||

= fundamental ||

stc

* Market value of stock = $10

* intrinsic value → next price = $12

$+2

undervalued

Buying

Intrinsic value

= fair

= fundamental

Market correction

stc

* Market value of stock = $10

* intrinsic value → next price = $10
  fair //
  = fundamental //

holding
↓
Fair valued
↑ ↓



* Market value of stock = $10 $+2 $+5 holding

* intrinsic value → next price = $11

fair !!

= fundamental!!

Fair valued



* Market value of stock = $10

* intrinsic value → next. price = $15

fair !!

= fundamental!!

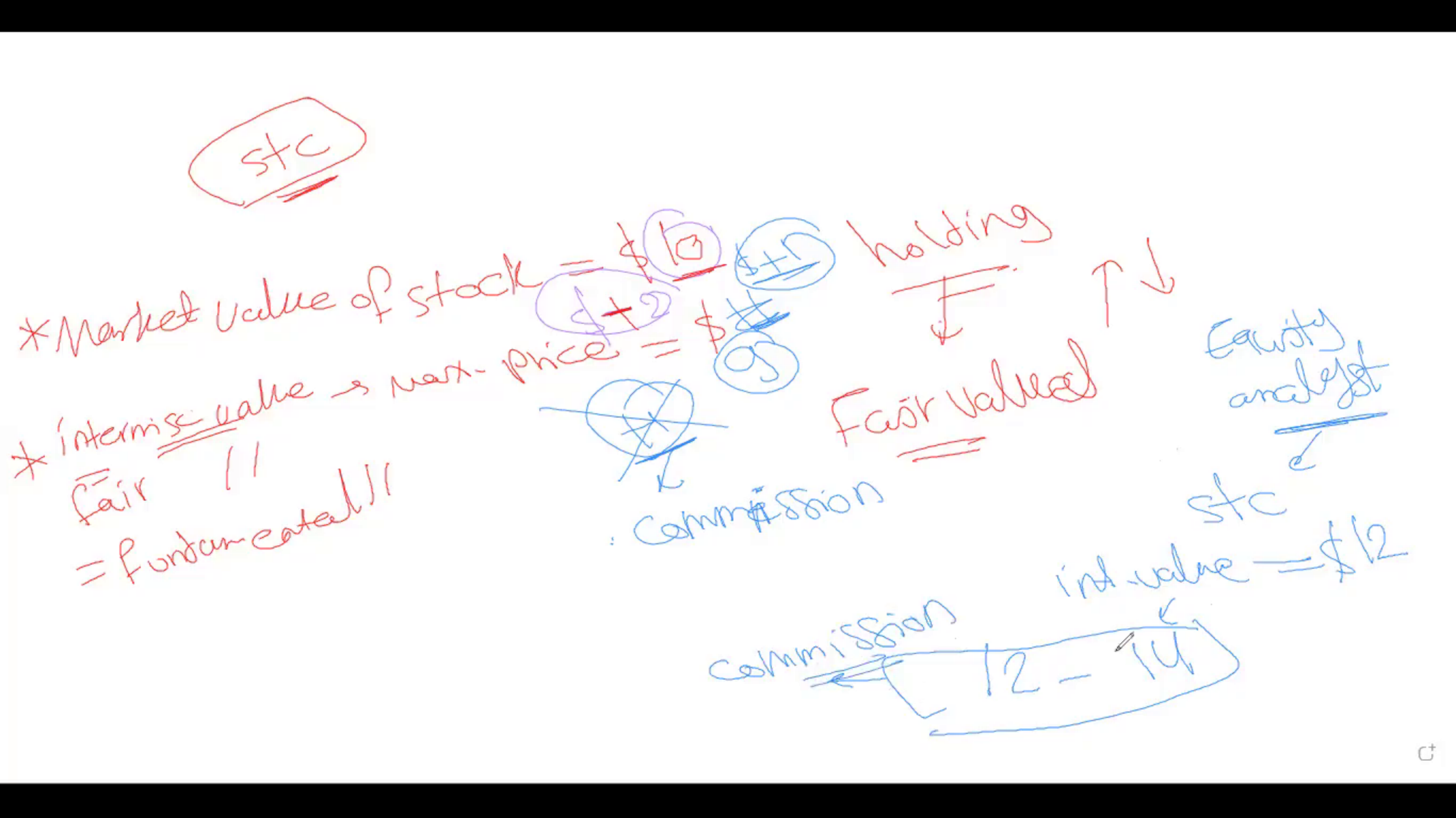
$+2

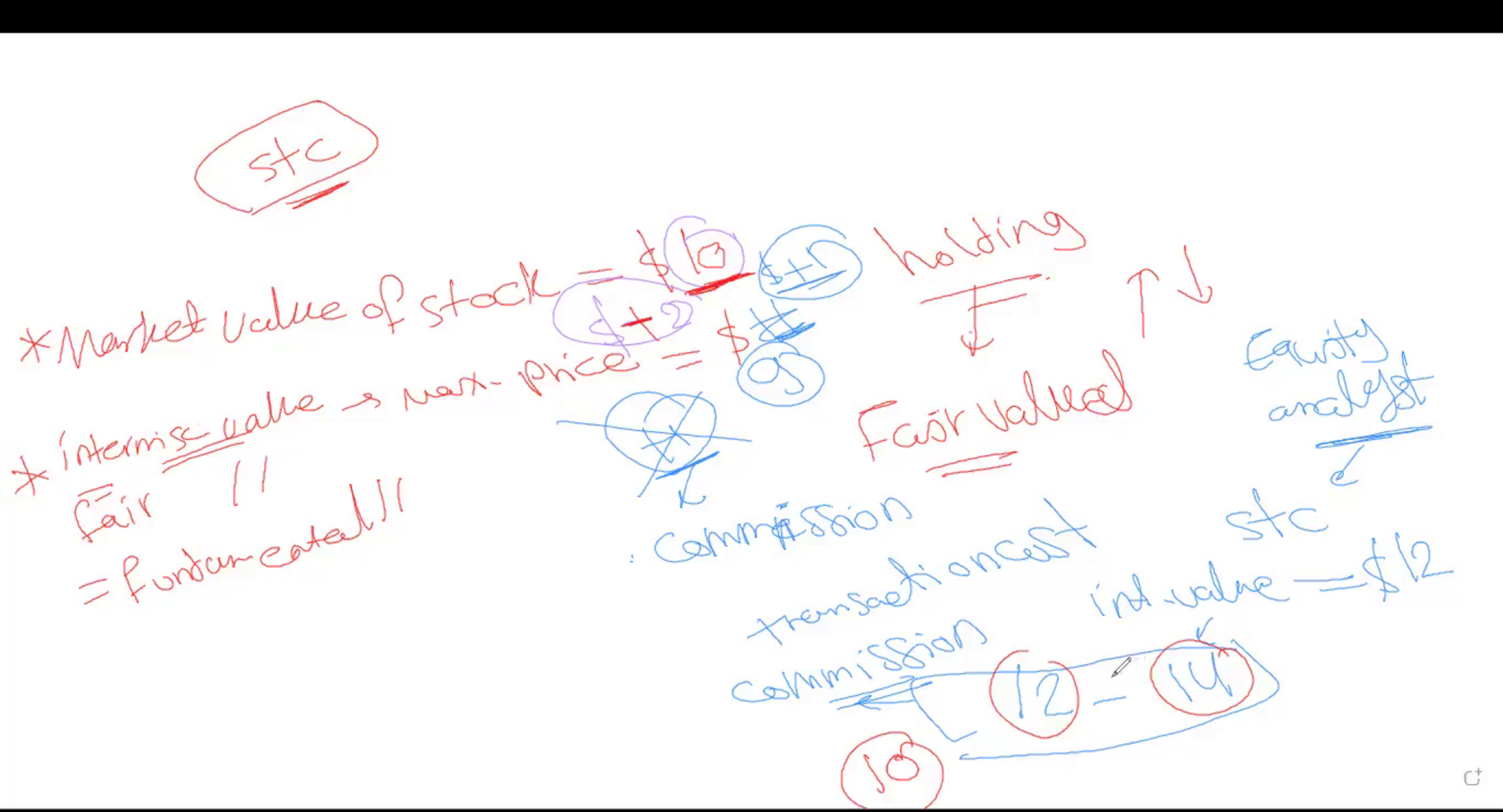
$+5

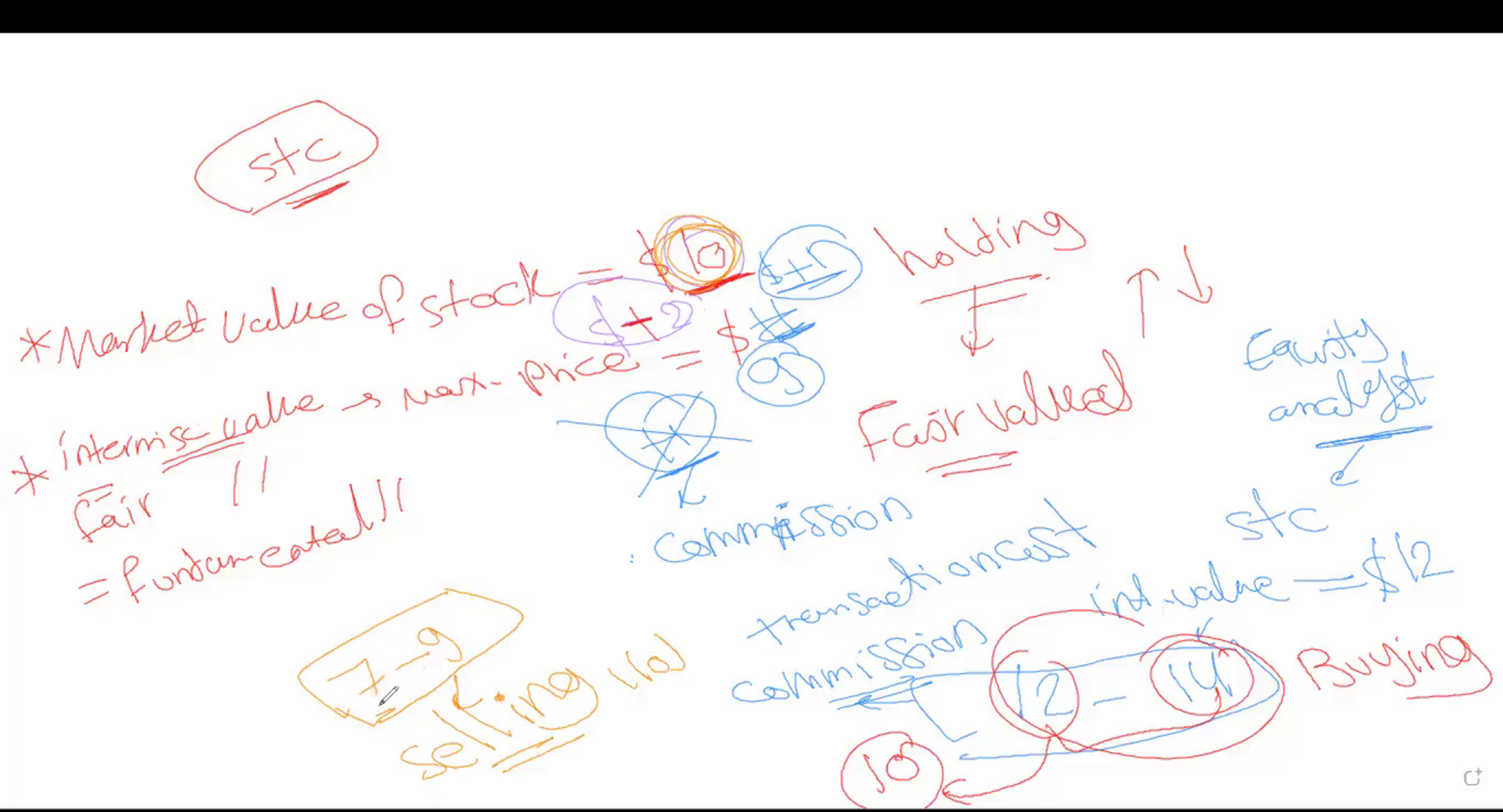
holding

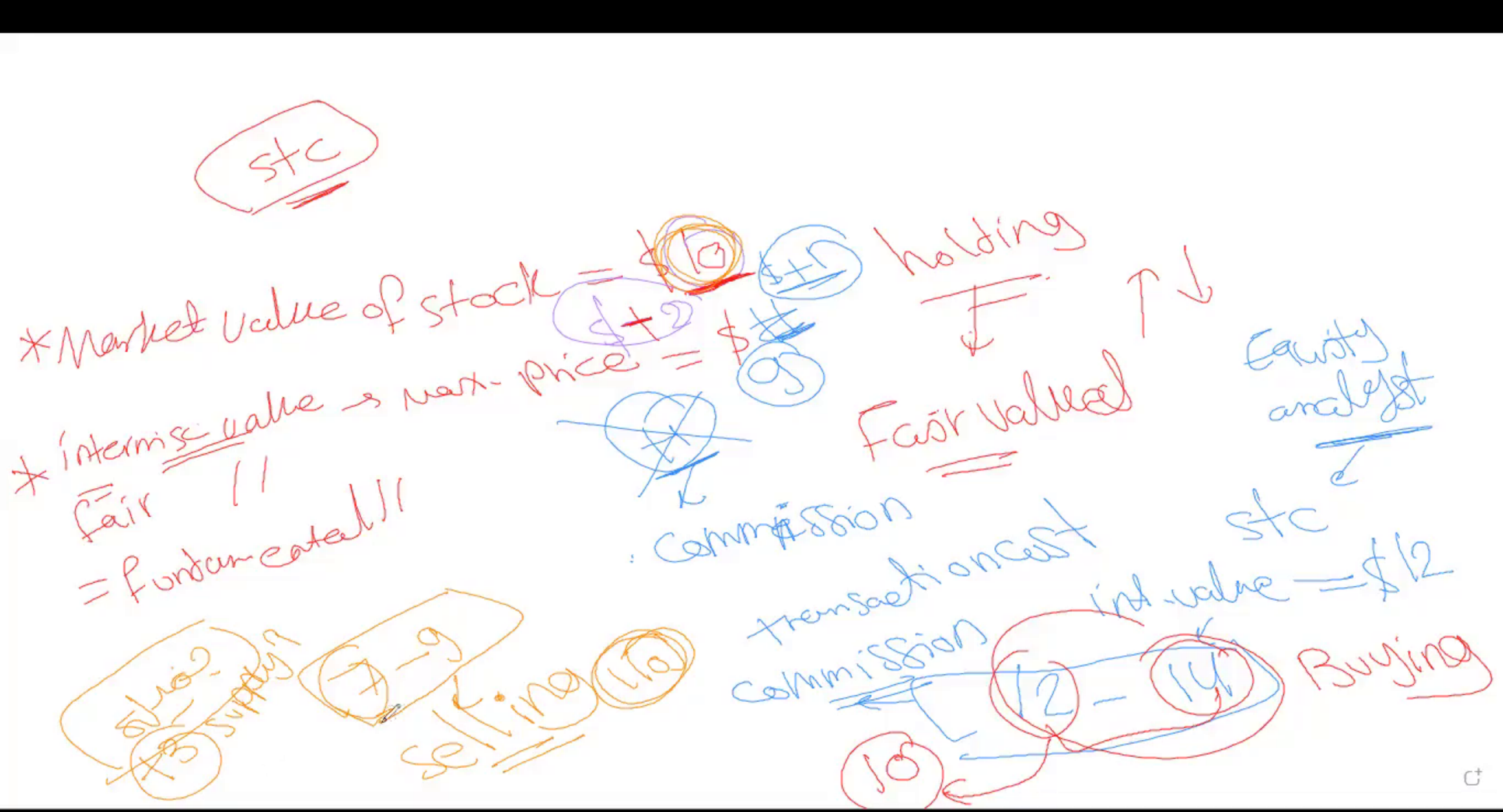
fair valued

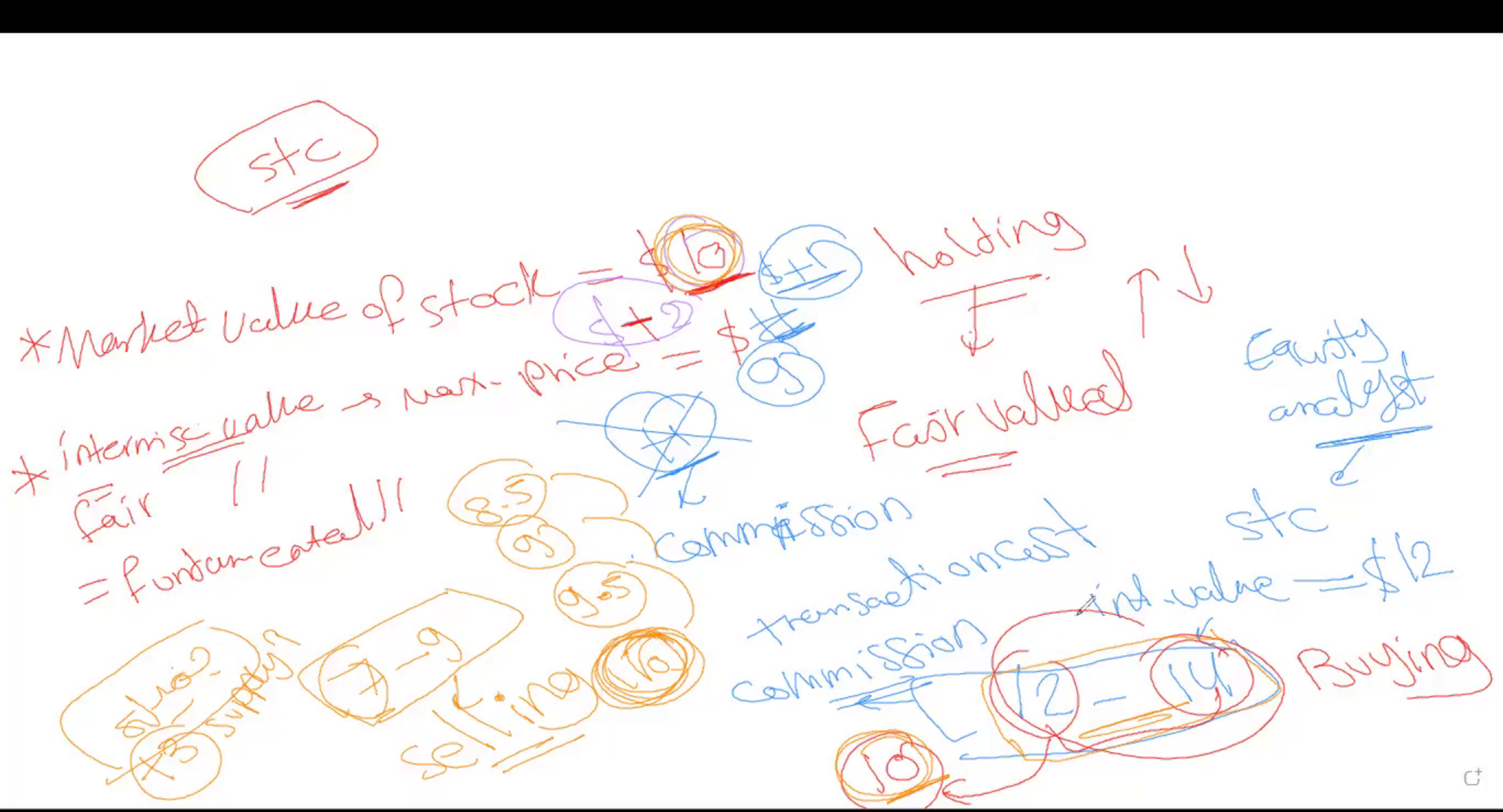
: commission


stc
* Market value of stock = $10
$+5
holding
$+2
* intrinsic value → max. price = $
fair //
= fundamental //
05
Fair valued
Equity analyst
: commission
stc
int. value = $12
commission
12 - 14


stc
* Market value of stock = $10
* intrinsic value → max. price = $
fair
= fundamental
$+1
$+2
holding
Fair valued
Equity analyst
: commission
transaction cost
commission
stc
int. value = $12
12
14
10


stc
*Market value of stock =
*intrinsic value → max. price =
fair
= fundamental
holding
Fair valued
equity analyst
: commission
transaction cost
commission
stc
int. value = $12
12 - 14
Buying
10
7 - 9
selling


stc
*Market value of stock =
*intrinsic value → next. price =
fair //
=fundamental//
holding
Fair valued
equity analyst
: commission
transaction cost
commission
stc
int. value = $12
Buying
selling


stc
* Market value of stock =
* intrinsic value → next price =
fair
= fundamental
holding
fair valued
equity analyst
commission
transaction cost
commission
stc
int. value = $12
selling
buying

- There are things to consider when executing the valuation models:

1. The **larger the percentage difference** between market prices and estimated values, **the more likely the investor is to take a position** based on the estimate of intrinsic value

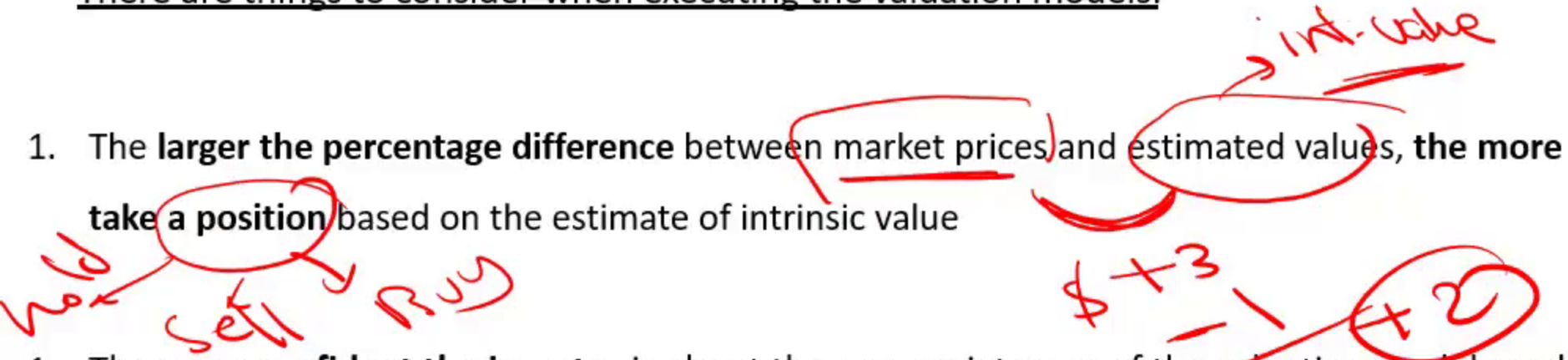
1. The **more confident the investor** is about the appropriateness of the valuation model used, the **more likely the investor is to take an investment position** in the stock

2. The more confident the investor is about the **estimated inputs used in the valuation model**, the **more likely the investor is to take an investment position** in a stock that is identified as overvalued or undervalued. Analysts must also consider the sensitivity of a model value to each of its inputs in deciding whether to act on a difference between model values and market prices

3. Even if we assume that market prices sometimes deviate from intrinsic values, **market prices must be treated as fairly reliable indications of intrinsic value**. Investors must consider why a stock is mispriced in the market

- There are things to consider when executing the valuation models:

1. The **larger the percentage difference** between market prices and estimated values, **the more likely the investor is to take a position** based on the estimate of intrinsic value



1. The **more confident the investor** is about the appropriateness of the valuation model used, the **more likely the investor is to take an investment position** in the stock

2. The more confident the investor is about the **estimated inputs used in the valuation model**, the **more likely the investor is to take an investment position** in a stock that is identified as overvalued or undervalued. Analysts must also consider the sensitivity of a model value to each of its inputs in deciding whether to act on a difference between model values and market prices

3. Even if we assume that market prices sometimes deviate from intrinsic values, **market prices must be treated as fairly reliable indications of intrinsic value**. Investors must consider why a stock is mispriced in the market

- There are things to consider when executing the valuation models:

1. The **larger the percentage difference** between market prices and estimated values, **the more likely the investor is to take a position** based on the estimate of intrinsic value

1. The **more confident the investor** is about the appropriateness of the valuation model used, the **more likely the investor is to take an investment position** in the stock

2. The more confident the investor is about the **estimated inputs used in the valuation model**, the **more likely the investor is to take an investment position** in a stock that is identified as overvalued or undervalued. Analysts must also consider the sensitivity of a model value to each of its inputs in deciding whether to act on a difference between model values and market prices

3. Even if we assume that market prices sometimes deviate from intrinsic values, **market prices must be treated as fairly reliable indications of intrinsic value**. Investors must consider why a stock is mispriced in the market

b: Describe major categories of equity valuation models.

One of major categories of equity valuation model is:

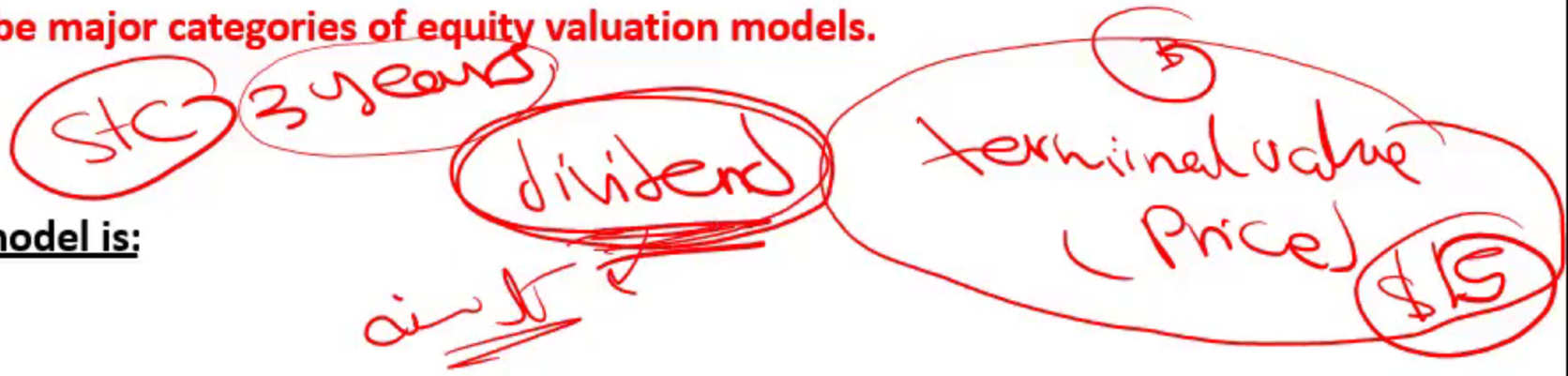
- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

b: Describe major categories of equity valuation models.

One of major categories of equity valuation model is:

- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

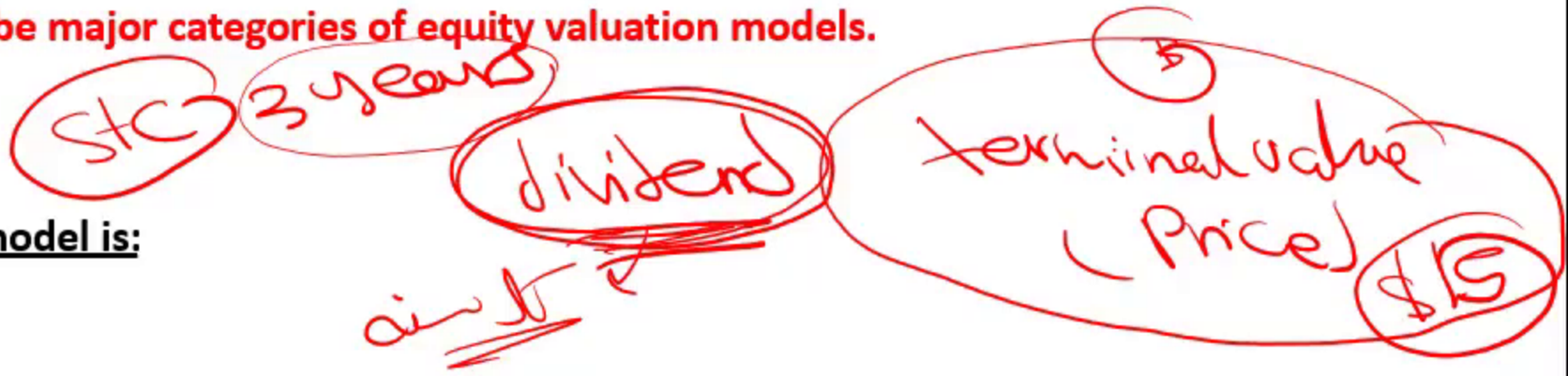
b: Describe major categories of equity valuation models.



One of major categories of equity valuation model is:

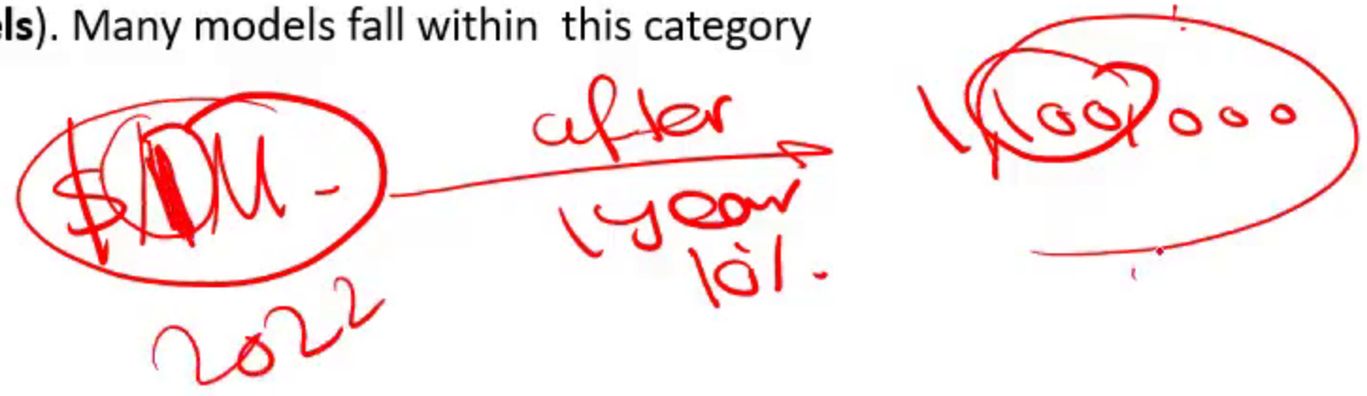
- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

b: Describe major categories of equity valuation models.

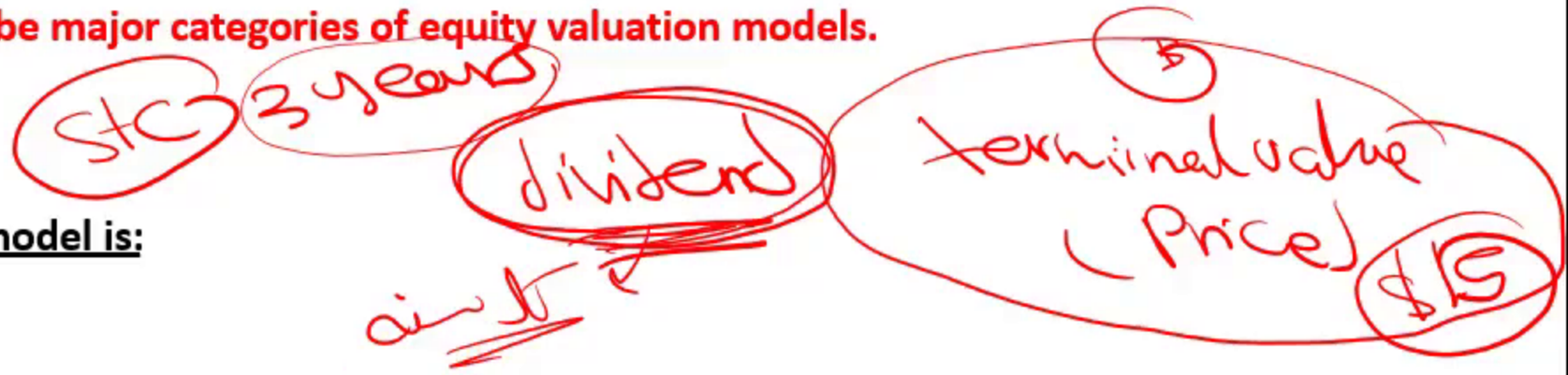


One of major categories of equity valuation model is:

- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

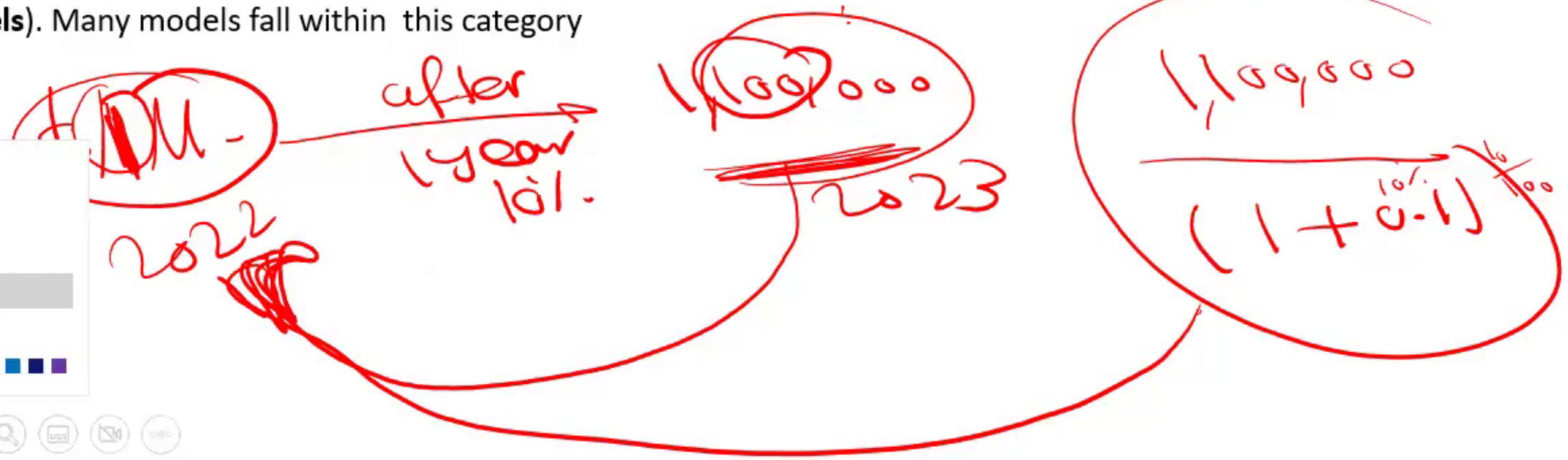


b: Describe major categories of equity valuation models.



One of major categories of equity valuation model is:

- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category



Laser Pointer
Pen
Highlighter
Eraser
Erase All Ink on Slide

b: Describe major categories of equity valuation models.

One of major categories of equity valuation model is:

- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

b: Describe major categories of equity valuation models.

One of major categories of equity valuation model is:

- **Present value models** (synonym: **discounted cash flow models**). These models estimate the intrinsic value of a security as the present value of the future benefits expected to be received from the security. In present value models, benefits are often defined in terms of cash expected to be distributed to shareholders (**dividend discount models**) or in terms of cash flows available to be distributed to shareholders after meeting capital expenditure and working capital needs (**free-cash- flow-to-equity models**). Many models fall within this category

c. Explain the rationale for using present value models to value equity and describe the dividend discount and free-cash-flow-to- equity models.

- **The Dividend Discount Model: Description**

If the issuing company is assumed to be a going concern, the intrinsic value of a share is the present value of expected future dividends. If a constant required rate of return is also assumed, then the DDM expression for the intrinsic value of a share is Equation 1:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \qquad (1)$$

1 year

where

V_0 – value of a share of stock today, at $t = 0$
D_t = expected dividend in year t, assumed to be paid at the end of the year
r = required rate of return on the stock

At the shareholder level, cash received from a common stock investment includes any dividends received and the proceeds when shares are sold. If an investor intends to buy and hold a share for one year, the value of the share today is the present value of two cash flows—namely, the expected dividend *plus* the expected selling price in one year:

$$V_0 = \frac{D_1 + P_1}{(1+r)^1} = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1} \qquad (2)$$

where P_1 = the expected price per share at $t = 1$.

To estimate the expected selling price, P_1, the analyst could estimate the price another investor with a one-year holding period would pay for the share in one year. If V_0 is based on D_1 and P_1, it follows that P_1 could be estimated from D_2 and P_2:

$$P_1 = \frac{D_2 + P_2}{(1+r)}$$

Substituting the right side of this equation for P_1 in Equation 2 results in V_0 estimated as

$$V_0 = \frac{D_1}{(1+r)} + \frac{D_2 + P_2}{(1+r)^2} = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{P_2}{(1+r)^2}$$

c. Explain the rationale for using present value models to value equity and describe the dividend discount and free-cash-flow-to- equity models.

- **The Dividend Discount Model: Description**

If the issuing company is assumed to be a going concern, the intrinsic value of a share is the present value of expected future dividends. If a constant required rate of return is also assumed, then the DDM expression for the intrinsic value of a share is Equation 1:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \qquad (1)$$

1 year

where

V_0 – value of a share of stock today, at $t = 0$
D_t = expected dividend in year t, assumed to be paid at the end of the year
r = required rate of return on the stock

At the shareholder level, cash received from a common stock investment includes any dividends received and the proceeds when shares are sold. If an investor intends to buy and hold a share for one year, the value of the share today is the present value of two cash flows—namely, the expected dividend *plus* the expected selling price in one year:

2022 2023

$$V_0 = \frac{D_1 + P_1}{(1+r)^1} = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1} \qquad (2)$$

1 year

where P_1 = the expected price per share at $t = 1$.

To estimate the expected selling price, P_1, the analyst could estimate the price another investor with a one-year holding period would pay for the share in one year. If V_0 is based on D_1 and P_1, it follows that P_1 could be estimated from D_2 and P_2:

$$P_1 = \frac{D_2 + P_2}{(1+r)}$$

Substituting the right side of this equation for P_1 in Equation 2 results in V_0 estimated as

$$V_0 = \frac{D_1}{(1+r)} + \frac{D_2 + P_2}{(1+r)^2} = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{P_2}{(1+r)^2}$$

c. Explain the rationale for using present value models to value equity and describe the dividend discount and free-cash-flow-to- equity models.

- **The Dividend Discount Model: Description**

If the issuing company is assumed to be a going concern, the intrinsic value of a share is the present value of expected future dividends. If a constant required rate of return is also assumed, then the DDM expression for the intrinsic value of a share is Equation 1:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \qquad (1)$$

where

V_0 – value of a share of stock today, at $t = 0$
D_t = expected dividend in year t, assumed to be paid at the end of the year
r = required rate of return on the stock

At the shareholder level, cash received from a common stock investment includes any dividends received and the proceeds when shares are sold. If an investor intends to buy and hold a share for one year, the value of the share today is the present value of two cash flows—namely, the expected dividend *plus* the expected selling price in one year:

$$V_0 = \frac{D_1 + P_1}{(1+r)^1} = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1} \qquad (2)$$

where P_1 = the expected price per share at $t = 1$.

To estimate the expected selling price, P_1, the analyst could estimate the price another investor with a one-year holding period would pay for the share in one year. If V_0 is based on D_1 and P_1, it follows that P_1 could be estimated from D_2 and P_2:

$$P_1 = \frac{D_2 + P_2}{(1+r)}$$

Substituting the right side of this equation for P_1 in Equation 2 results in V_0 estimated as

$$V_0 = \frac{D_1}{(1+r)} + \frac{D_2 + P_2}{(1+r)^2} = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{P_2}{(1+r)^2}$$

EXAMPLE: One-period DDM valuation

Calculate the value of a stock that paid a $1 dividend last year, if next year's dividend will be 5% higher and the stock will sell for $13.45 at year-end. The required return is 13.2%.

Answer:

The next dividend is the current dividend increased by the estimated growth rate. In this case, we have:

$$D_1 = D_0 \times (1 + \text{dividend growth rate}) = \$1.00 \times (1 + 0.05) = \$1.05$$

The present value of the expected future cash flows is:

$$\text{dividend: } \frac{\$1.05}{1.132} = \$0.93$$

$$\text{year-end price: } \frac{\$13.45}{1.132} = \$11.88$$

The current value based on the investor's expectations is:

$$\text{stock value} = \$0.93 + \$11.88 = \$12.81$$

EXAMPLE: One-period DDM valuation

Calculate the value of a stock that paid a $1 dividend last year, if next year's dividend will be 5% higher and the stock will sell for $13.45 at year-end. The required return is 13.2%.

Answer:

The next dividend is the current dividend increased by the estimated growth rate. In this case, we have:

$$D_1 = D_0 \times (1 + \text{dividend growth rate}) = \$1.00 \times (1 + 0.05) = \$1.05$$

The present value of the expected future cash flows is:

$$\text{dividend: } \frac{\$1.05}{1.132} = \$0.93$$

$$\text{year-end price: } \frac{\$13.45}{1.132} = \$11.88$$

The current value based on the investor's expectations is:

$$\text{stock value} = \$0.93 + \$11.88 = \$12.81$$

EXAMPLE: One-period DDM valuation

Calculate the value of a stock that paid a $1 dividend last year, if next year's dividend will be 5% higher and the stock will sell for $13.45 at year-end. The required return is 13.2%.

Answer:

The next dividend is the current dividend increased by the estimated growth rate. In this case, we have:

$$D_1 = D_0 \times (1 + \text{dividend growth rate}) = \$1.00 \times (1 + 0.05) = \$1.05$$

The present value of the expected future cash flows is:

$$\text{dividend: } \frac{\$1.05}{1.132} = \$0.93$$

$$\text{year-end price: } \frac{\$13.45}{1.132} = \$11.88$$

The current value based on the investor's expectations is:

$$\text{stock value} = \$0.93 + \$11.88 = \$12.81$$

EXAMPLE: One-period DDM valuation

Calculate the value of a stock that paid a $1 dividend last year, if next year's dividend will be 5% higher and the stock will sell for $13.45 at year-end. The required return is 13.2%.

Answer:

The next dividend is the current dividend increased by the estimated growth rate. In this case, we have:

$$D_1 = D_0 \times (1 + \text{dividend growth rate}) = \$1.00 \times (1 + 0.05) = \$1.05$$

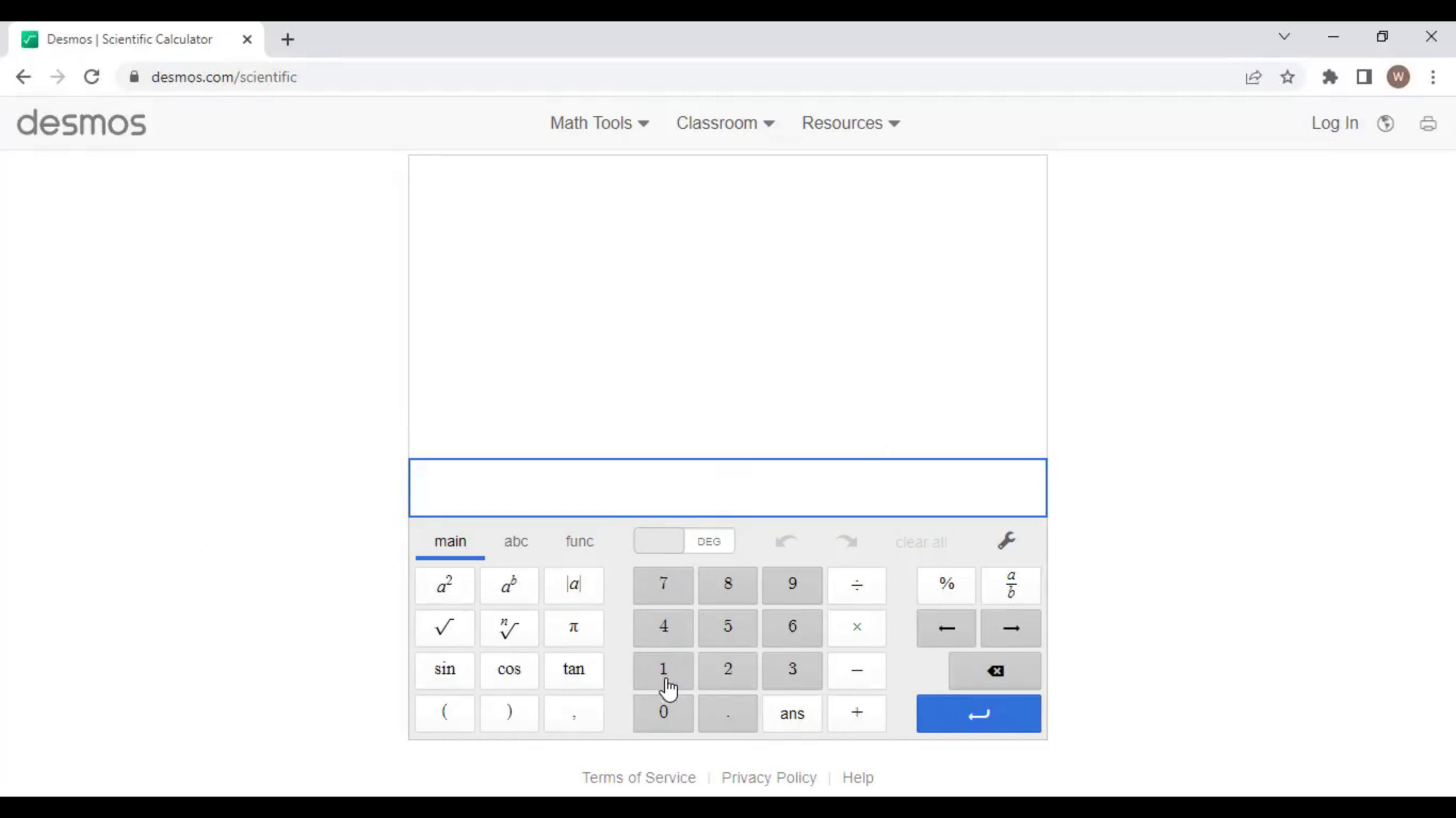
The present value of the expected future cash flows is:

$$\text{dividend: } \frac{\$1.05}{1.132} = \$0.93$$

$$\text{year-end price: } \frac{\$13.45}{1.132} = \$11.88$$

The current value based on the investor's expectations is:

$$\text{stock value} = \$0.93 + \$11.88 = \$12.81$$


Desmos | Scientific Calculator
desmos.com/scientific
desmos
Math Tools
Classroom
Resources
Log In
main
abc
func
DEG
clear all
sin
cos
tan
Terms of Service
Privacy Policy
Help

EXAMPLE: One-period DDM valuation

Calculate the value of a stock that paid a $1 dividend last year, if next year's dividend will be 5% higher and the stock will sell for $13.45 at year-end. The required return is 13.2%.

Answer:

The next dividend is the current dividend increased by the estimated growth rate. In this case, we have:

$$D_1 = D_0 \times (1 + \text{dividend growth rate}) = \$1.00 \times (1 + 0.05) = \$1.05$$

The present value of the expected future cash flows is:

$$\text{dividend: } \frac{\$1.05}{1.132} = \$0.93$$

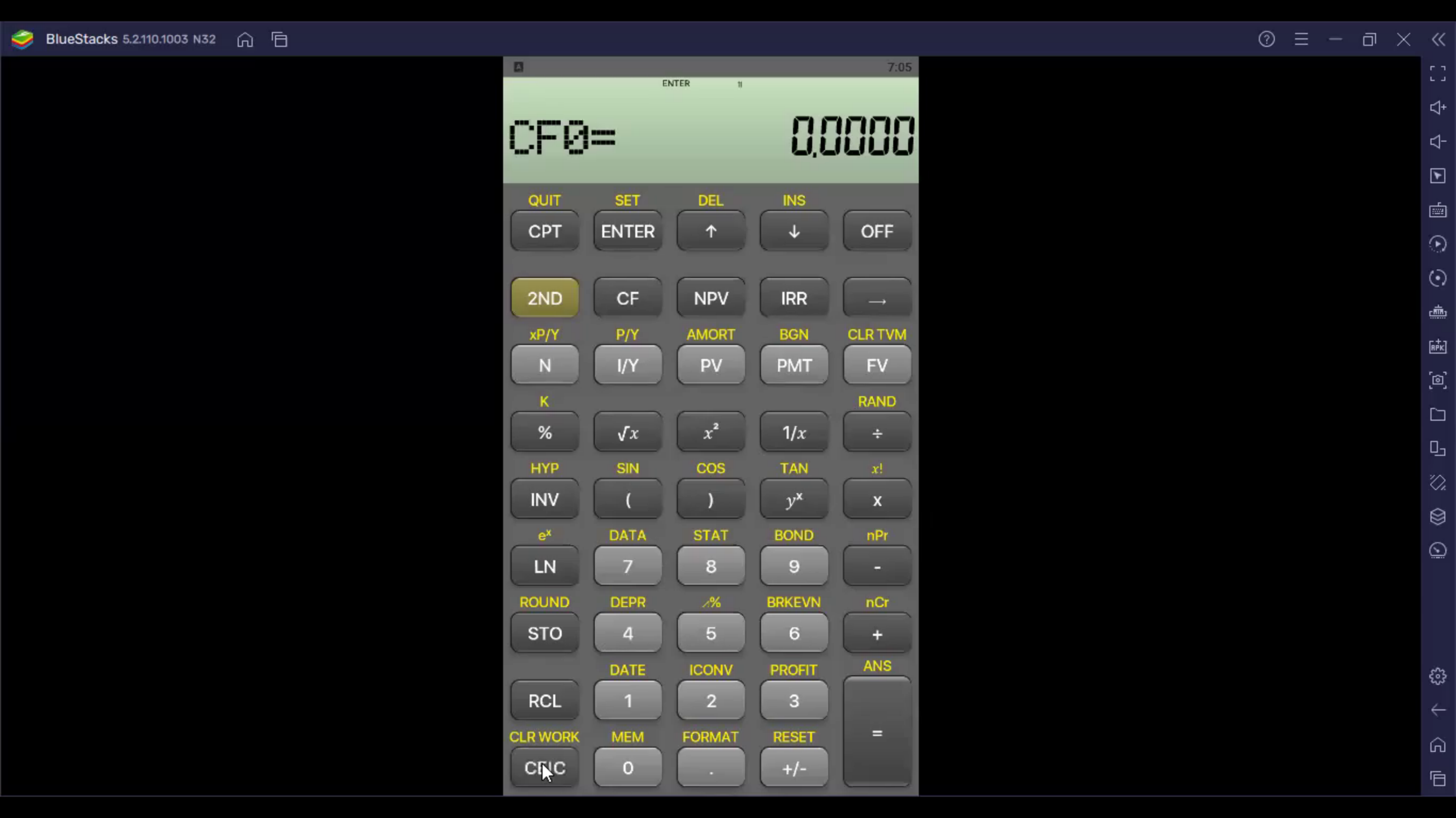
$$\text{year-end price: } \frac{\$13.45}{1.132} = \$11.88$$

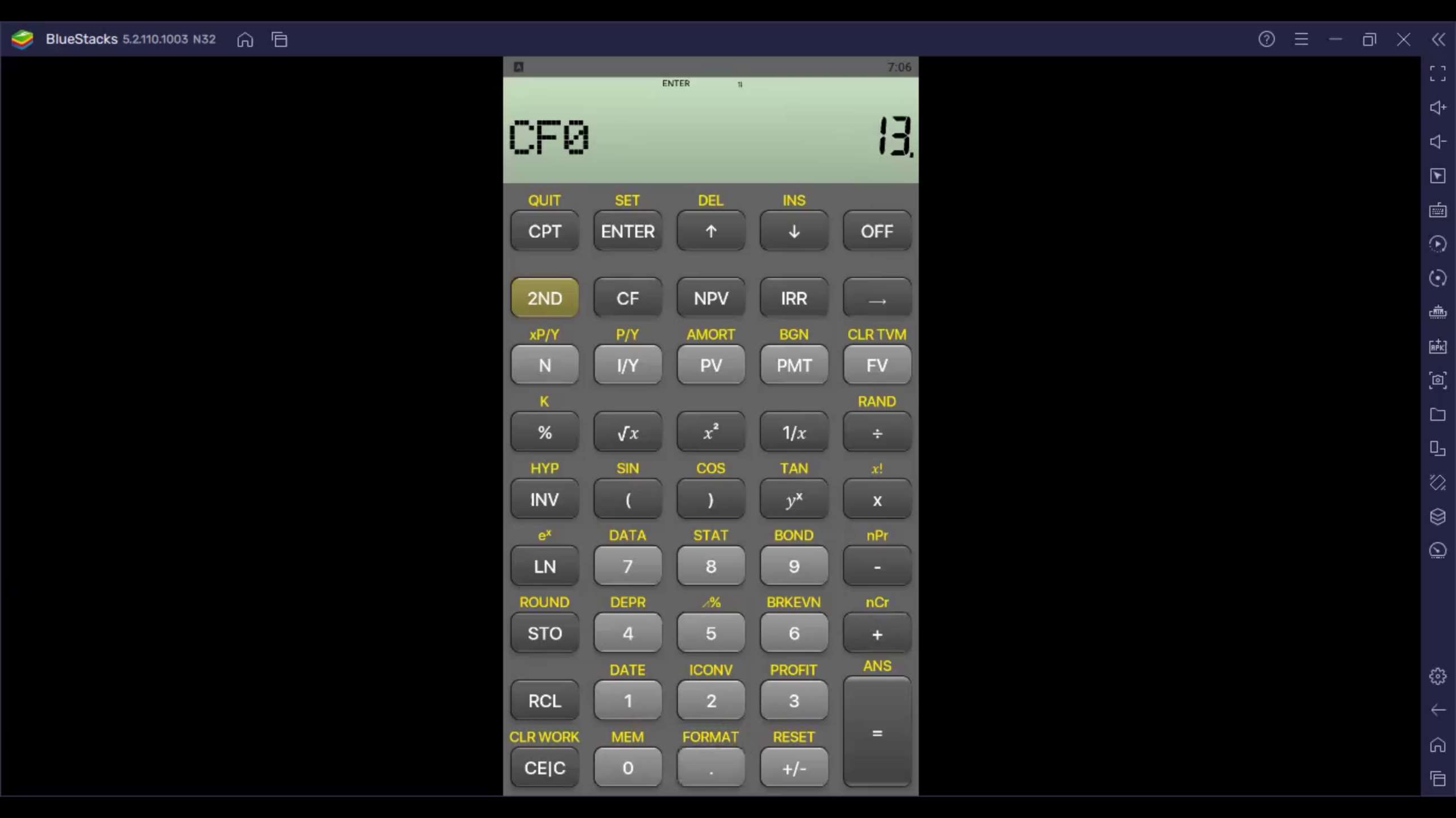
The current value based on the investor's expectations is:

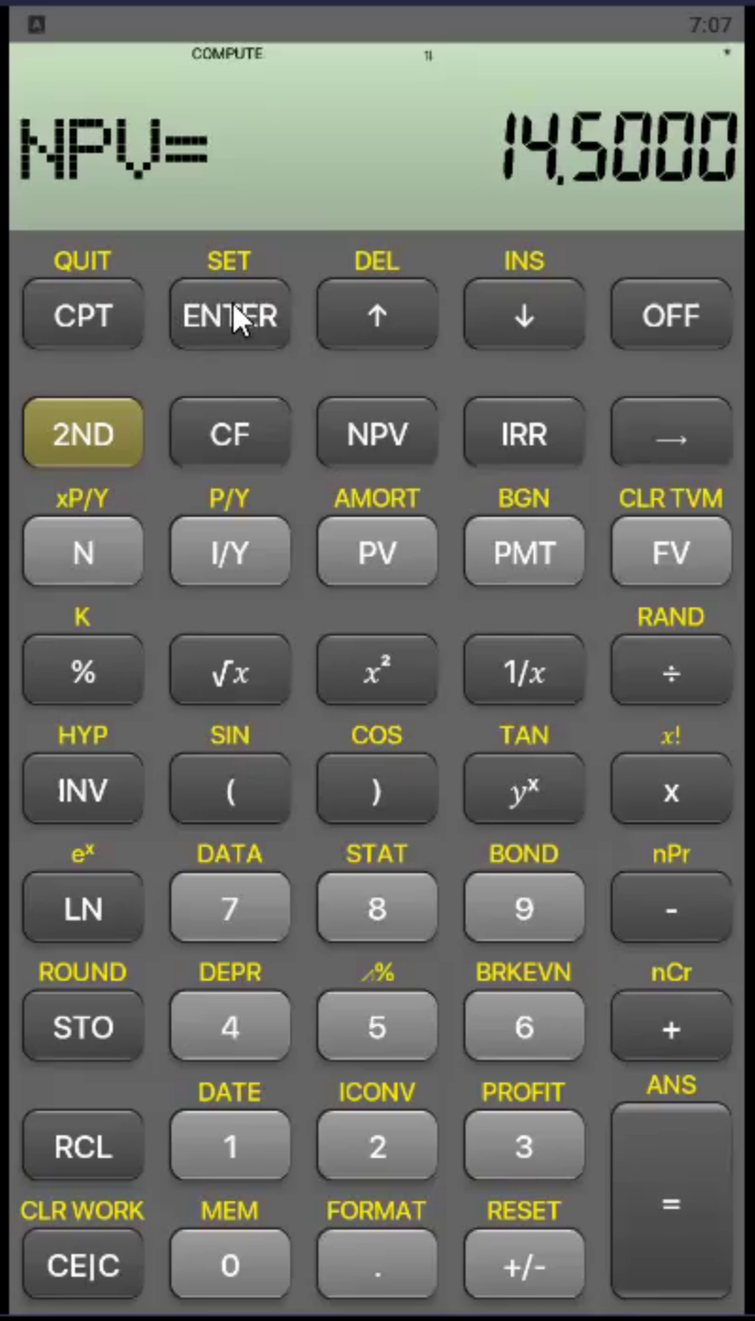
$$\text{stock value} = \$0.93 + \$11.88 = \$12.81$$

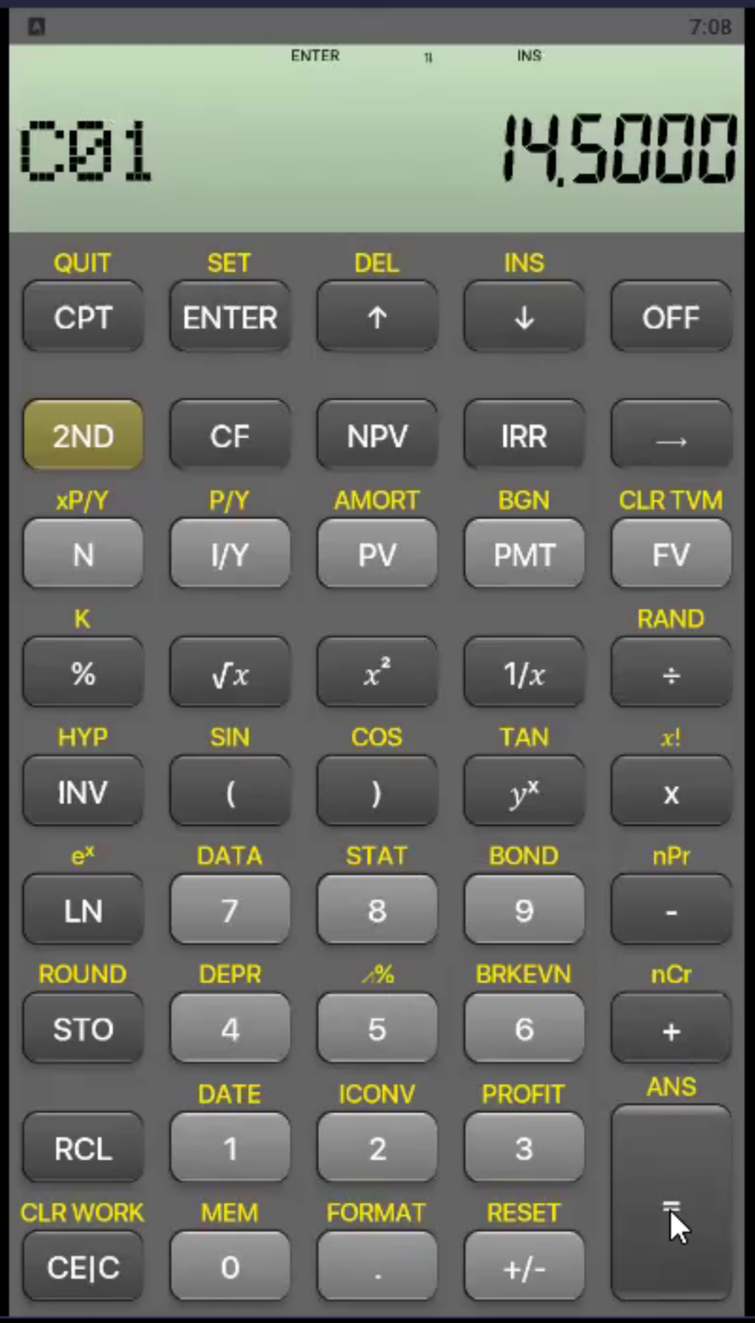
$$V_0 = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1}$$

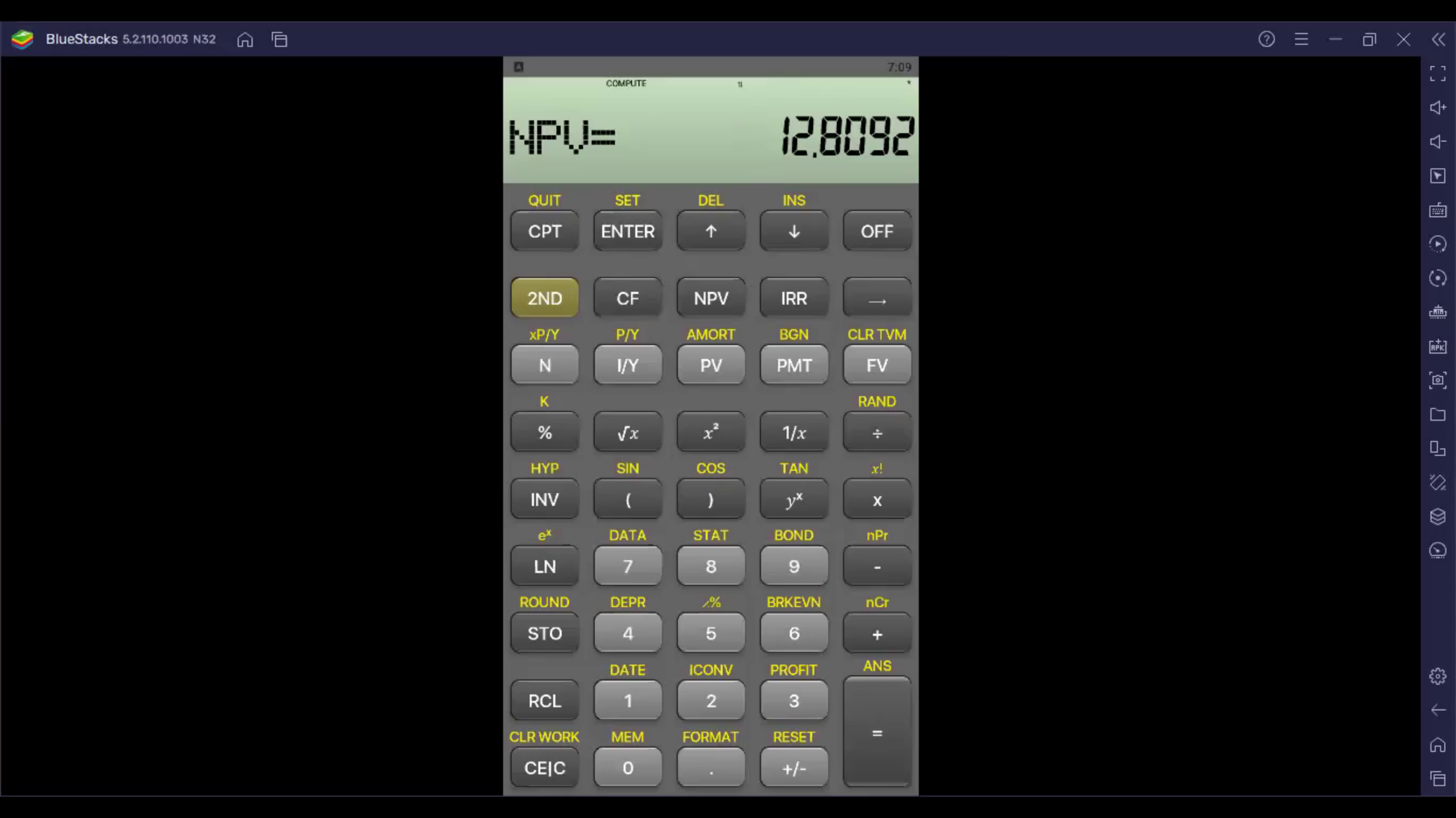
$$V_0 = \frac{1(1+0.05)}{(1+0.132)^1} + \frac{13.45}{(1+0.132)^1}$$


BlueStacks 5.2.110.1003 N32
7:05
ENTER
CF0=
0.0000
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
y^x
x
e^x
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CLC
0
.
+/-


BlueStacks 5.2.110.1003 N32
7:06
ENTER
CF0
13.
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
y^x
x
e^x
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CE|C
0
.
+/-


7:07
COMPUTE
NPV=
14.5000
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
y^x
x
e^x
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CE|C
0
.
+/-


7:08
ENTER
INS
C01
14.5000
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
y^x
x
e^x
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
CLR WORK
MEM
FORMAT
RESET
CE|C
0
.
+/-
=


BlueStacks 5.2.110.1003 N32
7:09
COMPUTE
NPV=
12.8092
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
yˣ
x
eˣ
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CE|C
0
.
+/-

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends $= \$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

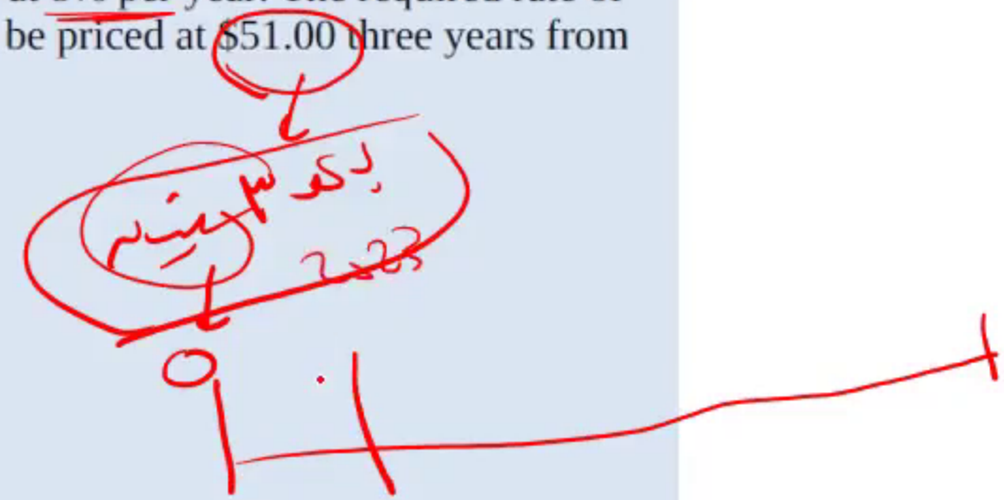
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends $= \$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.



EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends $= \$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

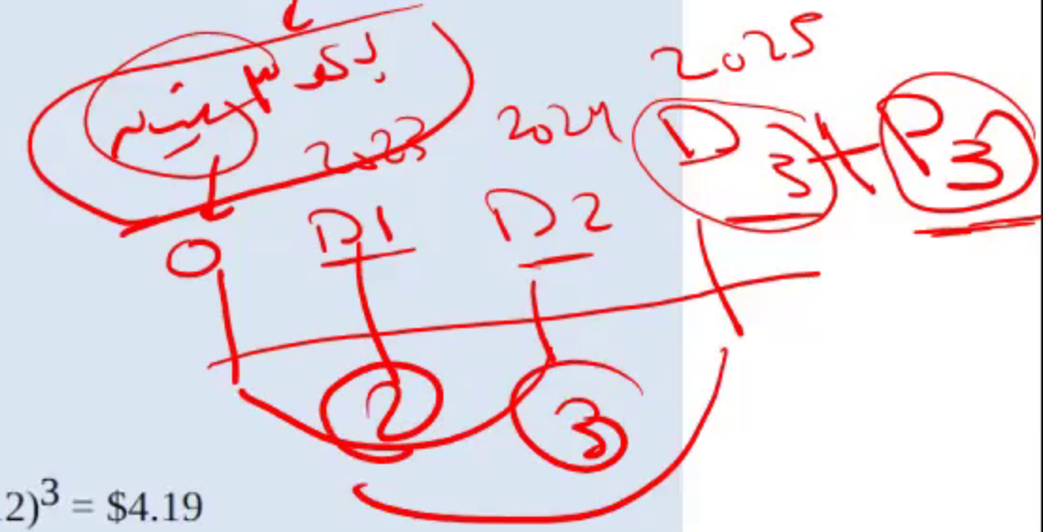
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.



EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

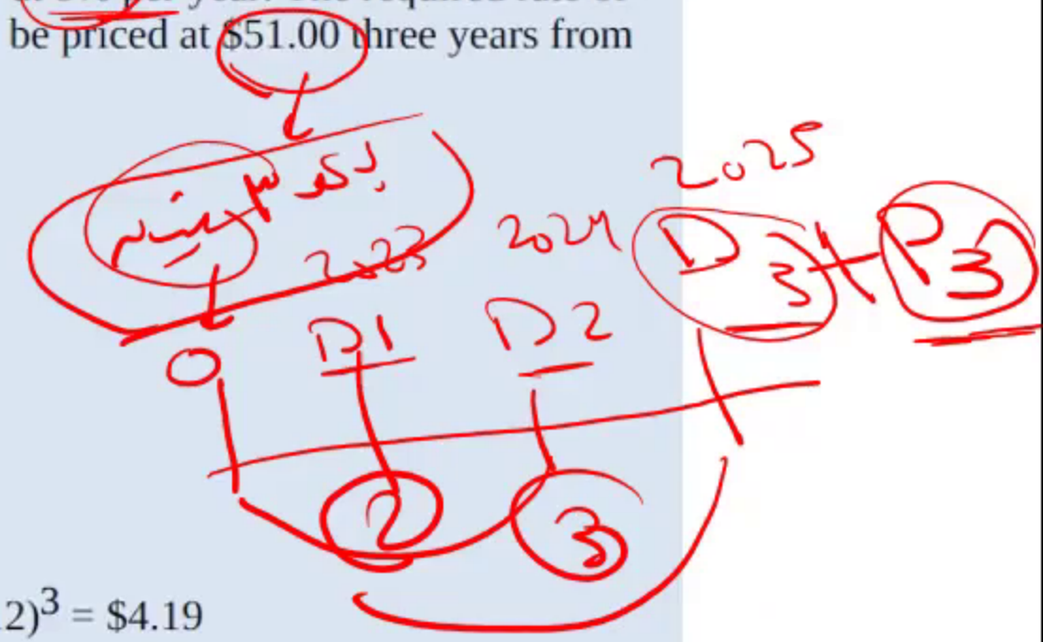
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.



$$\frac{D1}{(1+r)^1} + \frac{D2}{(1+r)^2} + \frac{D3}{(1+r)^3} + \frac{P3}{(1+r)^3}$$

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

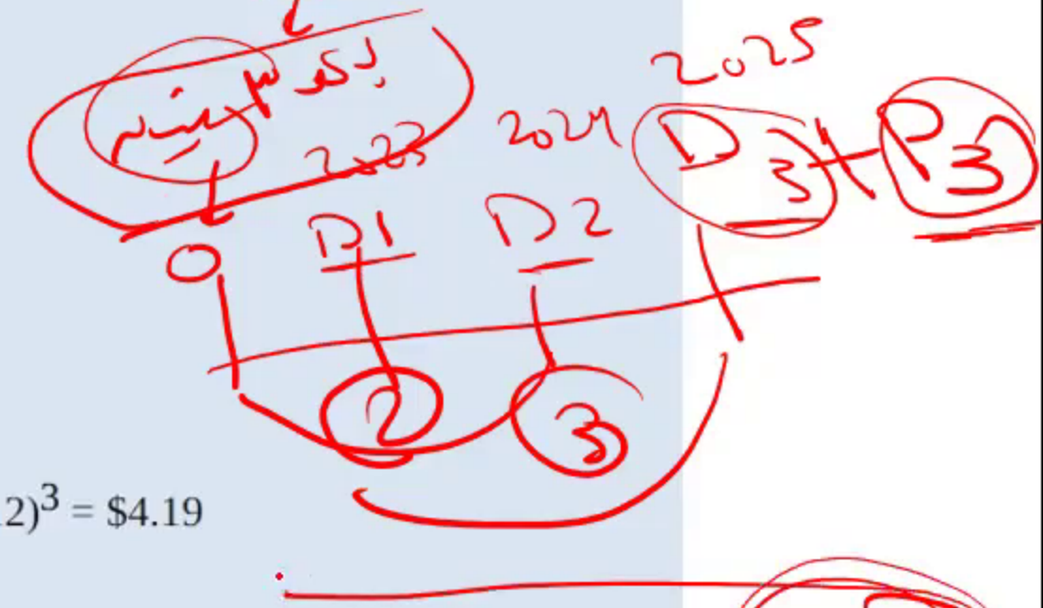
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.



$$\frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \frac{P_3}{(1+r)^3}$$

$$\frac{1.62}{(1+0.12)^1} + \frac{1.75}{(1+0.12)^2} + \frac{1.89}{(1+0.12)^3} + \frac{P_3}{(1+0.12)^3}$$

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

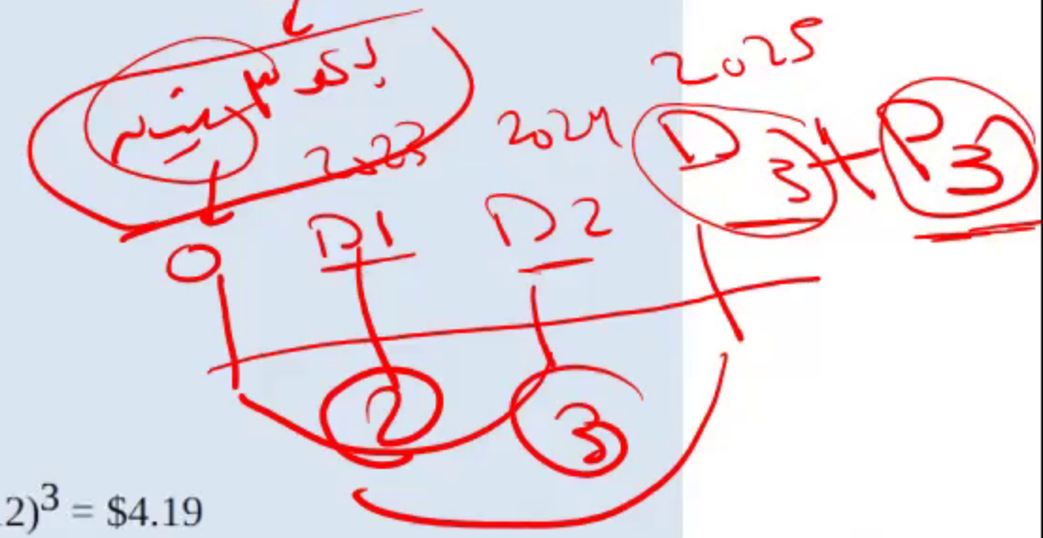
$D_3 = \$1.50(1.08)^3 = \$1.89$

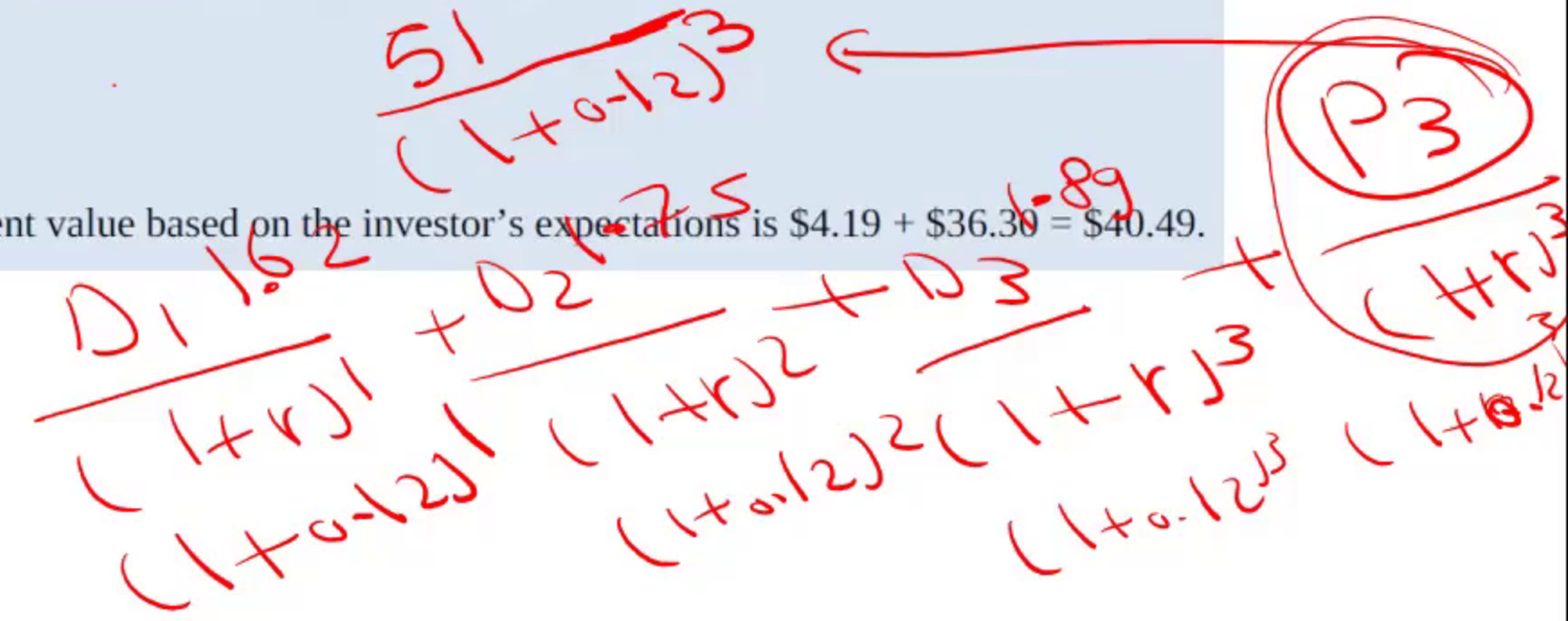
PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.





Desmos | Scientific Calculator

desmos.com/scientific

desmos

Math Tools | Classroom | Resources | Log In

$1.5 \cdot (1 + .08)$ $= 1.62$

main | abc | func | DEG | clear all

a^2	a^b	$\lvert a \rvert$	7	8	9	÷	%	$\frac{a}{b}$
$\sqrt{}$	$\sqrt[n]{}$	π	4	5	6	×	←	→
sin	cos	tan	1	2	3	−	⌫	
(	)	,	0	.	ans	+	↵	

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

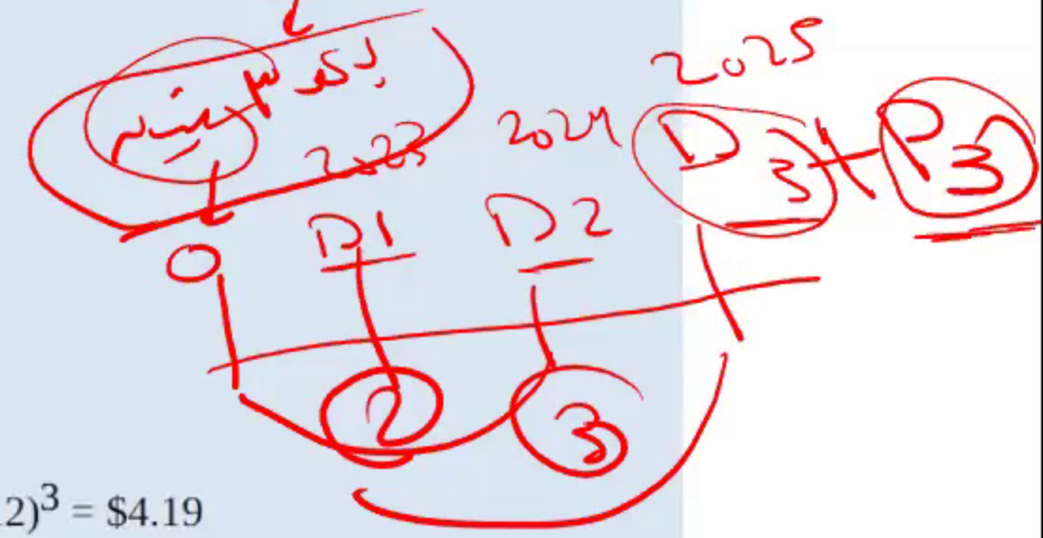
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.



$$\frac{51}{(1+0.12)^3}$$

$$\frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \frac{P_3}{(1+r)^3}$$

$$\frac{1.62}{(1+0.12)^1} + \frac{1.75}{(1+0.12)^2} + \frac{1.89}{(1+0.12)^3}$$

Desmos | Scientific Calculator

desmos.com/scientific

desmos

Math Tools | Classroom | Resources | Log In

$$\frac{1.62}{1.12} + \frac{1.75}{1.12^2} = 2.841517857$$

main | abc | func | DEG | clear all

a^2	a^b	$\lvert a \rvert$	7	8	9	÷	%	$\frac{a}{b}$
$\sqrt{}$	$\sqrt[n]{}$	π	4	5	6	×	←	→
sin	cos	tan	1	2	3	−	⌫	
(	)	,	0	.	ans	+	↵	

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

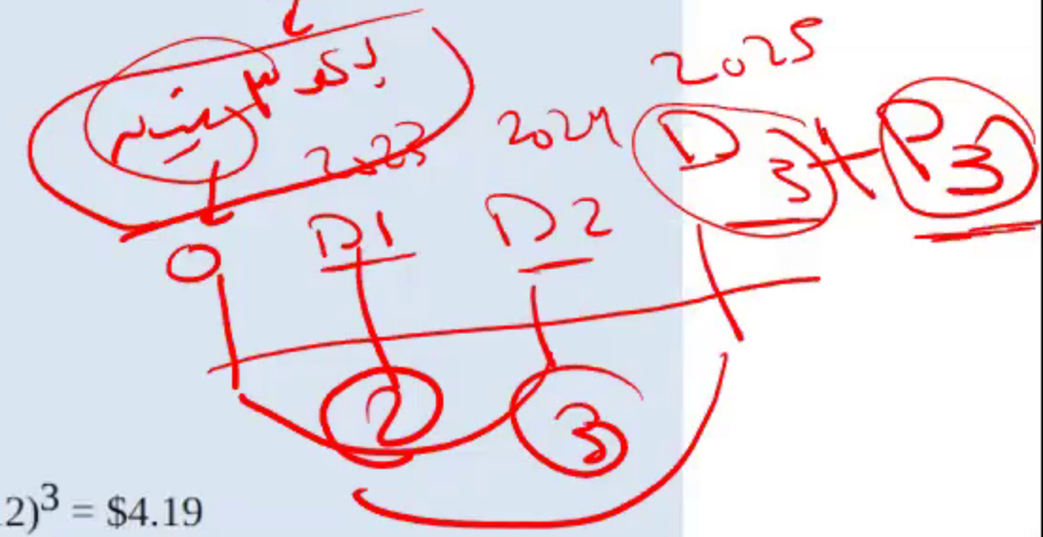
$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

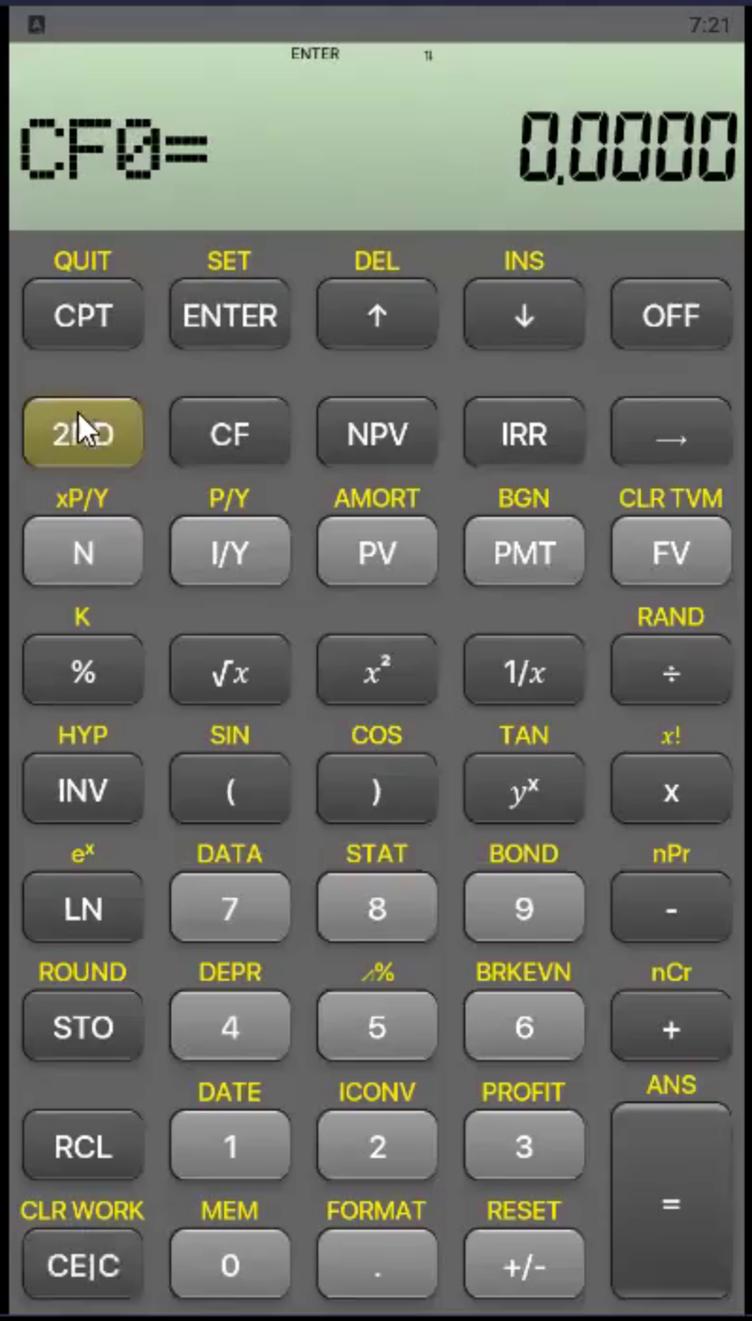
Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

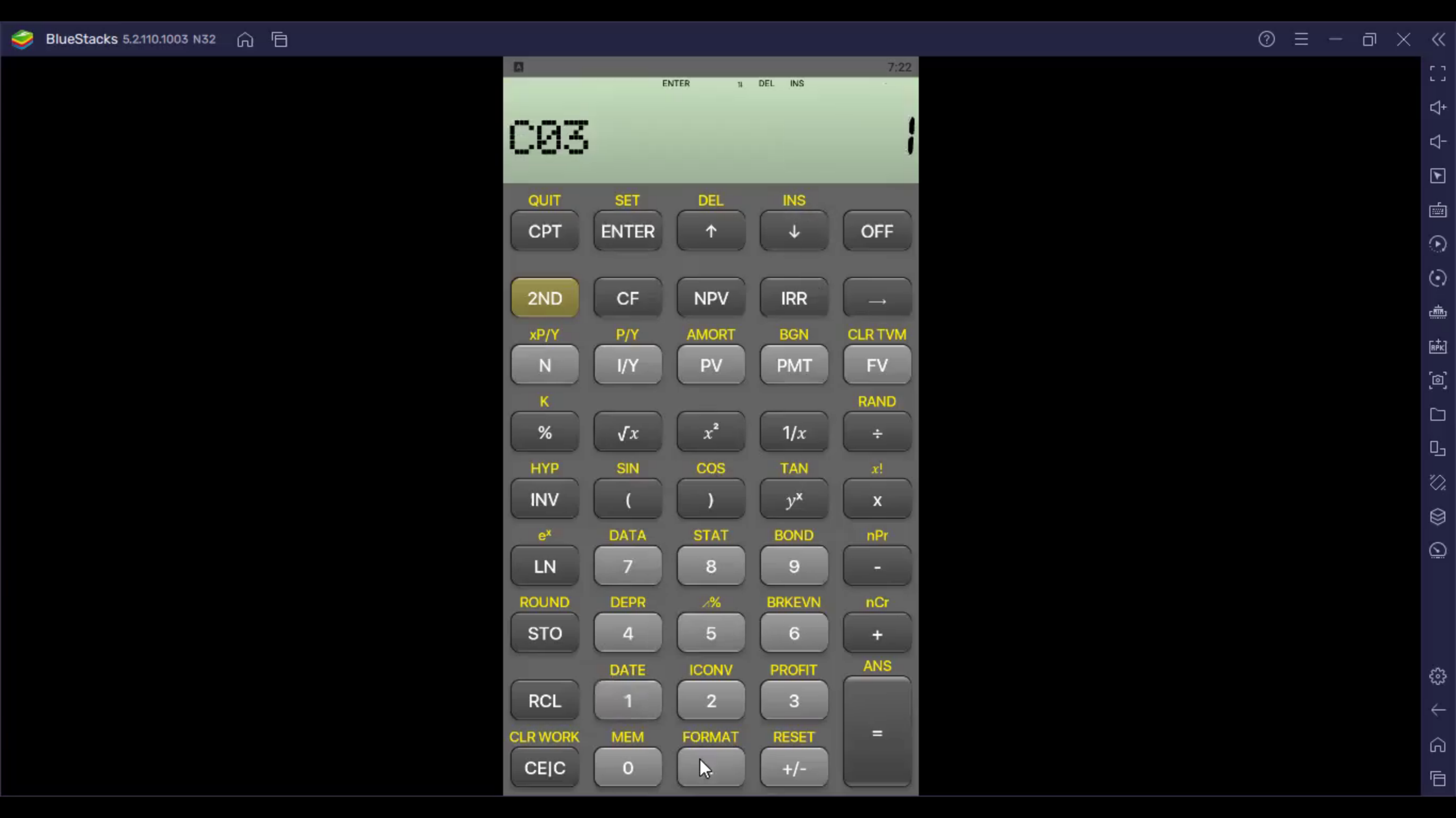


$$\frac{51}{(1+0.12)^3}$$

$$\frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3}$$

$$\frac{1.62}{(1+0.12)^1} + \frac{1.75}{(1+0.12)^2} + \frac{}{(1+0.12)^3}$$


7:21
ENTER
CF0=
0.0000
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
y^x
x
e^x
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CE|C
0
.
+/-


BlueStacks 5.2.110.1003 N32
7:22
ENTER
DEL
INS
C03
1
QUIT
SET
DEL
INS
CPT
ENTER
↑
↓
OFF
2ND
CF
NPV
IRR
→
xP/Y
P/Y
AMORT
BGN
CLR TVM
N
I/Y
PV
PMT
FV
K
RAND
%
√x
x²
1/x
÷
HYP
SIN
COS
TAN
x!
INV
(
)
yˣ
x
eˣ
DATA
STAT
BOND
nPr
LN
7
8
9
-
ROUND
DEPR
Δ%
BRKEVN
nCr
STO
4
5
6
+
DATE
ICONV
PROFIT
ANS
RCL
1
2
3
=
CLR WORK
MEM
FORMAT
RESET
CE|C
0
+/-

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

What Is Working Capital?

Working capital, also known as net working capital (NWC), is the difference between a company's current assets—such as cash, accounts receivable/customers' unpaid bills, and inventories of raw materials and finished goods—and its current liabilities, such as accounts payable and debts. It's a commonly used measurement to gauge the short-term health of an organization.

•Working capital, also called net working capital, represents the difference between a company's current assets and current liabilities.

•Working capital is a measure of a company's liquidity and short-term financial health.

•A company has negative working if its ratio of current assets to liabilities is less than one (or if it has more current liabilities than current assets).

•Positive working capital indicates that a company can fund its current operations and invest in future activities and growth.

•High working capital isn't always a good thing. It might indicate that the business has too much inventory, not investing its excess cash, or not capitalizing on low-expense debt opportunities.

What Is Working Capital?

Working capital, also known as net working capital (NWC), is the difference between a company's current assets—such as cash, accounts receivable/customers' unpaid bills, and inventories of raw materials and finished goods—and its current liabilities, such as accounts payable and debts. It's a commonly used measurement to gauge the short-term health of an organization.

•Working capital, also called net working capital, represents the difference between a company's current assets and current liabilities.

•Working capital is a measure of a company's liquidity and short-term financial health.

•A company has negative working if its ratio of current assets to liabilities is less than one (or if it has more current liabilities than current assets).

•Positive working capital indicates that a company can fund its current operations and invest in future activities and growth.

•High working capital isn't always a good thing. It might indicate that the business has too much inventory, not investing its excess cash, or not capitalizing on low-expense debt opportunities.

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other

  words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation – increase in working capital – fixed capital investment (FCInv) – debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations – FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other

  words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation – increase in working capital – fixed capital investment (FCInv) – debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations – FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other

  words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

- **Free cash flow to equity (FCFE)** is often used in discounted cash flow models instead of dividends because it represents the potential amount of cash that could be paid out to common shareholders. That is, **FCFE reflects the firm's capacity to pay dividends**. **FCFE is also useful for firms that do not currently pay dividends**
- FCFE is defined as the **cash remaining after a firm meets all of its debt obligations and provides for the capital expenditures necessary to maintain existing assets** and to purchase the new assets needed to support the assumed growth of the firm. In other words, it is the cash available to the firm's equity holders after a firm meets all of its other obligations. FCFE for a period is often calculated as:

FCFE = net income + depreciation − increase in working capital − fixed capital investment (FCInv) − debt principal repayments + new debt issues

FCFE can also be calculated as:

FCFE = cash flow from operations − FCInv + net borrowing

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*k*i) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

$$[E(Rmkt)] \text{ as: } R = Rf + \beta\,[E(Rmkt) - Rf]$$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

[E(Rmkt)] as: $R = Rf + \beta [E(Rmkt) - Rf]$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

[E(Rmkt)] as: R = Rf + β [E(Rmkt) – Rf]

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

[E(Rmkt)] as: $R = Rf + \beta\,[E(Rmkt) - Rf]$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

[E(Rmkt)] as: $R = Rf + \beta\,[E(Rmkt) - Rf]$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

$$[E(R_{mkt})] \text{ as: } R = R_f + \beta [E(R_{mkt}) - R_f]$$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

Estimating the Required Return for Equity

- The capital asset pricing model (CAPM) provides an estimate of the required rate of return (*ki*) for security *i* as a function of its **systematic risk** (βi), the risk-free rate (*R*f), and the expected return on the market

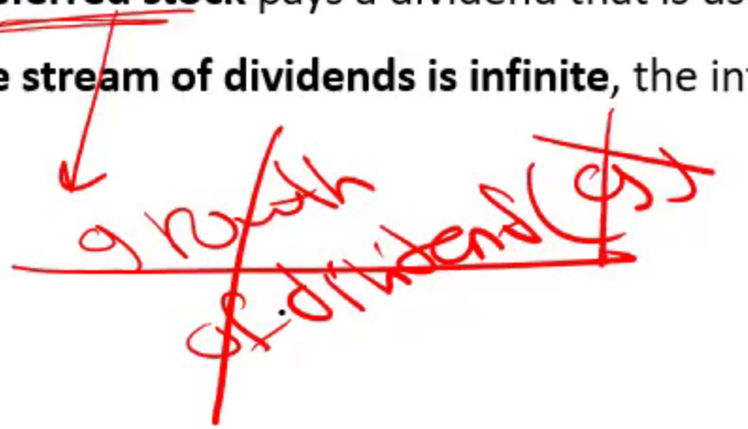
$$[E(R_{mkt})] \text{ as: } R = R_f + \beta [E(R_{mkt}) - R_f]$$

- There is some controversy over whether the CAPM is the best model to calculate the required return on equity. Also, **different analysts will likely use different inputs, so there is no single number that is correct.**

- **Beta** is a concept that **measures the expected move in a stock relative to movements in the overall market**. A beta greater than 1.0 suggests that the stock is more volatile than the broader market, and a beta less than 1.0 indicates a stock with lower volatility.

E: Calculate the intrinsic value of a non-callable, non-convertible preferred stock.

- **Preferred stock** pays a dividend that is usually fixed and usually has an indefinite maturity. When the dividend **is fixed and the stream of dividends is infinite**, the infinite period dividend discount model reduces to a simple ratio:



$$V_0 = \frac{D_0}{r}$$

EXAMPLE: Preferred stock valuation

A company's $100 par preferred stock pays a $5.00 annual dividend and has a required return of 8%. Calculate the value of the preferred stock.

Answer:

Value of the preferred stock: $D_p / k_p = \$5.00 / 0.08 = \$62.50$

E: Calculate the intrinsic value of a non-callable, non-convertible preferred stock.

- **Preferred stock** pays a dividend that is usually fixed and usually has an indefinite maturity. When the dividend **is fixed and the stream of dividends is infinite**, the infinite period dividend discount model reduces to a simple ratio:

$$V_0 = \frac{D_0}{r}$$

EXAMPLE: Preferred stock valuation

A company's $100 par preferred stock pays a $5.00 annual dividend and has a required return of 8%. Calculate the value of the preferred stock.

Answer:

Value of the preferred stock: $D_p / k_p = \$5.00 / 0.08 = \$62.50$

E: Calculate the intrinsic value of a non-callable, non-convertible preferred stock.

- **Preferred stock** pays a dividend that is usually fixed and usually has an indefinite maturity. When the dividend **is fixed and the stream of dividends is infinite**, the infinite period dividend discount model reduces to a simple ratio:

$$V_0 = \frac{D_0}{r}$$

EXAMPLE: Preferred stock valuation

A company's $100 par preferred stock pays a $5.00 annual dividend and has a required return of 8%. Calculate the value of the preferred stock.

Answer:

Value of the preferred stock: $D_p / k_p = \$5.00 / 0.08 = \$62.50$

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

EXAMPLE: Multiple-period DDM valuation

A stock recently paid a dividend of $1.50 which is expected to grow at 8% per year. The required rate of return of 12%. Calculate the value of this stock assuming that it will be priced at $51.00 three years from now.

Answer:

Find the PV of the future dividends:

$D_1 = \$1.50(1.08) = \$1.62$

$D_2 = \$1.50(1.08)^2 = \$1.75$

$D_3 = \$1.50(1.08)^3 = \$1.89$

PV of dividends = $\$1.62 / 1.12 + \$1.75 / (1.12)^2 + \$1.89 / (1.12)^3 = \$4.19$

Find the PV of the future price:

$\$51.00 / (1.12)^3 = \$36.30$

Add the present values. The current value based on the investor's expectations is $4.19 + $36.30 = $40.49.

f: Calculate and interpret the intrinsic value of an equity security based on the Gordon (constant) growth dividend discount model or a two-stage dividend discount model, as appropriate

The Gordon growth model (or constant growth model) assumes the annual growth rate of dividends, *g*, is constant. Hence, next period's dividend, *D*1, is D0(1 + g), the second year's dividend, D_2, is $D_0(1 + g)$, and so on. The extended equation using this assumption gives the present value of the expected future dividends (V_0) as:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+r)^t} = D_0\left[\frac{(1+g)}{(1+r)} + \frac{(1+g)^2}{(1+r)^2} + \ldots + \frac{(1+g)^\infty}{(1+r)^\infty}\right]$$

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

When the growth **rate of dividends is constant**, this equation simplifies to the

Gordon (constant) growth model:

<u>The assumptions of the Gordon growth model are:</u>

- Dividends are **the appropriate measure of shareholder wealth**
- The constant dividend growth rate, *g*, and required return on stock, *r*, **are never expected to change**
- ***r* must be greater than *g***. If not, the math will not work.

f: Calculate and interpret the intrinsic value of an equity security based on the Gordon (constant) growth dividend discount model or a two-stage dividend discount model, as appropriate

The Gordon growth model (or constant growth model) assumes the annual growth rate of dividends, *g*, is constant. Hence, next period's dividend, $D1$, is $D0(1 + g)$, the second year's dividend, D_2, is $D_0(1 + g)$, and so on. The extended equation using this assumption gives the present value of the expected future dividends (V_0) as:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+r)^t} = D_0\left[\frac{(1+g)}{(1+r)} + \frac{(1+g)^2}{(1+r)^2} + \ldots + \frac{(1+g)^\infty}{(1+r)^\infty}\right]$$

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

When the growth **rate of dividends is constant**, this equation simplifies to the

Gordon (constant) growth model:

The assumptions of the Gordon growth model are:

- Dividends are **the appropriate measure of shareholder wealth**
- The constant dividend growth rate, *g*, and required return on stock, *r*, **are never expected to change**
- ***r* must be greater than *g***. If not, the math will not work.

EXAMPLE: Gordon growth model valuation

Calculate the value of a stock that paid a $1.50 dividend last year, if dividends are expected to grow at 8% forever and the required return on equity is 12%.

Answer:

Determine D_1: $D_0(1 + g_c) = \$1.50(1.08) = \$1.62$

Calculate the stock's value $= D_1 / (k_e - g_c)$

$= \$1.62 / (0.12 - 0.08)$

$= \$40.50$

EXAMPLE: Gordon growth model valuation

Calculate the value of a stock that paid a $1.50 dividend last year, if dividends are expected to grow at 8% forever and the required return on equity is 12%.

Answer:

Determine D_1: $D_0(1 + g_c) = \$1.50(1.08) = \$1.62$

Calculate the stock's value $= D_1 / (k_e - g_c)$

$= \$1.62 / (0.12 - 0.08)$

$= \$40.50$

- This example demonstrates that the stock's value is determined by the relationship between the investor's required rate of return on equity, *r*, and the projected growth rate of dividends, *g*:

- As the difference between *r* and *g* **widens, the value of the stock falls**
- As the difference **narrows, the value of the stock rises**
- **Small changes in the difference** between *r* and *g* can **cause large changes in the stock's value**

- Because the estimated stock value **is very sensitive to the denominator**, an analyst should calculate several different value estimates using a range of required returns and growth rates.

- This example demonstrates that the stock's value is determined by the relationship between the investor's required rate of return on equity, *r*, and the projected growth rate of dividends, *g*:

- As the difference between *r* and *g* **widens, the value of the stock falls**
- As the difference **narrows, the value of the stock rises**
- **Small changes in the difference** between *r* and *g* can **cause large changes in the stock's value**

- Because the estimated stock value **is very sensitive to the denominator**, an analyst should calculate several different value estimates using a range of required returns and growth rates.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

tainable growth rate

pected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and inable growth rate.

25) × 21% = 15.75%

onomic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Laser Pointer
Pen
Highlighter
Eraser
Erase All Ink on Slide

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

Estimating the growth rate in dividends

To estimate the growth rate in dividends, the analyst can use three methods:

1. Use the historical growth in dividends for the firm.
2. Use the median industry dividend growth rate.
3. Estimate the sustainable growth rate

Sustainable Growth Rate; is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

$$g = b \times \text{ROE}$$

$$\text{sustainable growth} = (1 - \text{dividend payout ratio}) \times \text{ROE}$$

EXAMPLE: Sustainable growth rate

Green, Inc., is expected to pay dividends equal to 25% of earnings. Green's ROE is 21%. Calculate and interpret its sustainable growth rate.

Answer:

$$g = (1 - 0.25) \times 21\% = 15.75\%$$

With long-run economic growth typically in the single digits, it is unlikely that a firm could sustain 15.75% growth forever. The analyst should also examine the growth rate for the industry and the firm's historical growth rate to determine whether the estimate is reasonable.

h: Identify characteristics of companies for which the constant growth or a multistage dividend discount model is appropriate

- The **Gordon growth model** uses a single constant growth rate of dividends and **is most appropriate for valuing stable and mature, non-cyclical, dividend-paying firms**

- For dividend-paying firms with dividends that are **expected to grow rapidly, slowly,** or erratically over some period, followed by constant dividend growth, **some form of the multistage growth model should be employed**

- One variant of a multistage growth model assumes that the firm has three stages of dividend growth, not just two. These three stages can be categorized as growth, transition, and maturity. **A 3-stage model would be suitable for firms with an initial high growth rate, followed by a lower growth rate during a second, transitional period, followed by the constant growth rate in the long run,** such as a young firm still in the high growth phase

- When a firm does not pay dividends, **estimates of dividend payments some years in the future are highly speculative**. In this case, and in any case where future dividends cannot be estimated with much confidence, **valuation based on FCFE is appropriate as long as growth rates of earnings can be estimated**. In other cases, valuation based on price multiples may be more appropriate

h: Identify characteristics of companies for which the constant growth or a multistage dividend discount model is appropriate

- The **Gordon growth model** uses a single constant growth rate of dividends and **is most appropriate for valuing stable and mature, non-cyclical, dividend-paying firms**

- For dividend-paying firms with dividends that are **expected to grow rapidly, slowly,** or erratically over some period, followed by constant dividend growth, **some form of the multistage growth model should be employed**

- One variant of a multistage growth model assumes that the firm has three stages of dividend growth, not just two. These three stages can be categorized as growth, transition, and maturity. **A 3-stage model would be suitable for firms with an initial high growth rate, followed by a lower growth rate during a second, transitional period, followed by the constant growth rate in the long run,** such as a young firm still in the high growth phase

- When a firm does not pay dividends, **estimates of dividend payments some years in the future are highly speculative**. In this case, and in any case where future dividends cannot be estimated with much confidence, **valuation based on FCFE is appropriate as long as growth rates of earnings can be estimated**. In other cases, valuation based on price multiples may be more appropriate

h: Identify characteristics of companies for which the constant growth or a multistage dividend discount model is appropriate

- The **Gordon growth model** uses a single constant growth rate of dividends and **is most appropriate for valuing stable and mature, non-cyclical, dividend-paying firms**

- For dividend-paying firms with dividends that are **expected to grow rapidly, slowly,** or erratically over some period, followed by constant dividend growth, **some form of the multistage growth model should be employed**

- One variant of a multistage growth model assumes that the firm has three stages of dividend growth, not just two. These three stages can be categorized as growth, transition, and maturity. **A 3-stage model would be suitable for firms with an initial high growth rate, followed by a lower growth rate during a second, transitional period, followed by the constant growth rate in the long run,** such as a young firm still in the high growth phase

- When a firm does not pay dividends, **estimates of dividend payments some years in the future are highly speculative**. In this case, and in any case where future dividends cannot be estimated with much confidence, **valuation based on FCFE is appropriate as long as growth rates of earnings can be estimated**. In other cases, valuation based on price multiples may be more appropriate

Risk in Stock Valuation

Investors in common stocks face a number of risks that bondholders do not. This additional risk leads them to require a higher rate of return on a firm's stock than on its debt securities. For example, in the event of corporate failure, the claims of stockholders have lower priority than those of bondholders. So, stockholders face a greater risk of loss than bondholders. Dividends can be variable and omitted, whereas bond cash flows have a legal obligation to be met.

Poor ethical decisions and poor management are another source of risk for stock investors in that such decisions can lower future cash flows and raise the required rate of return demanded by future investors. Accounting gimmickry and decisions by self-serving managers can hurt stock prices

Risk in Stock Valuation

Investors in common stocks face a number of risks that bondholders do not. This additional risk leads them to require a higher rate of return on a firm's stock than on its debt securities. For example, in the event of corporate failure, the claims of stockholders have lower priority than those of bondholders. So, stockholders face a greater risk of loss than bondholders. Dividends can be variable and omitted, whereas bond cash flows have a legal obligation to be met.

Poor ethical decisions and poor management are another source of risk for stock investors in that such decisions can lower future cash flows and raise the required rate of return demanded by future investors. Accounting gimmickry and decisions by self-serving managers can hurt stock prices

If the general level of interest rates rises, investors will demand a higher rate of return on stocks to maintain their risk premium differential over debt securities. This will force stock prices downward. Therefore, stockholders risk losses from any general upward movement of market interest rates.

Also, future dividends, or dividend growth rates, are not known with certainty at the time stock is purchased. If poor corporate performance or adverse general economic conditions lead investors to lower their expectations about future dividend payments, this will lower the present value of shares of the stock, leaving the stockholder with the risk of capital loss. Stock analysts systematically review economic, industry, and firm conditions in great detail to gain insight into corporate growth prospects and the appropriate level of return that an investor should require of a stock.

Valuation and the Financial Environment

The price of an asset is the present value of future cash flows; the discount rate used in the present value calculation is the required rate of return on the investment. Future cash flows of firms and the required returns of investors are affected by the global and domestic economic environments and the competition faced by firms. Slower sales or higher expenses can harm a firm's ability to pay its bond interest or dividends or to reinvest in its future growth. Besides affecting cash flows, these can affect investors' required rates of return by increasing risk premiums or credit spreads. Inflation pressures and capital market changes influence the level of interest rates and required returns.

Domestic Economic Influences

Individuals can spend only what they have (income and savings) or what their future earning capacity will allow them to borrow. Consumption spending (spending by individuals for items such as food, cars, clothes, computers, and so forth) comprises about two-thirds of gross domestic product (GDP) in the United States. Generally, higher disposable incomes (that is, income after taxes) lead to higher levels of consumption spending. Higher levels of spending mean inventories are reduced and companies need to produce more and hire additional workers to meet sales demand. Corporations will spend to obtain supplies and workers based upon expectations of future demand. Similarly, they will invest in additional plant and equipment based upon expected future sales and income. Economic growth results in higher levels of consumer spending and corporate investment, which in turn stimulates job growth and additional demand. Slow or negative growth can lead to layoffs, pessimistic expectations, and reduced consumer and corporate spending. These effects will directly influence company profits and cash flows.

Domestic Economic Influences

Individuals can spend only what they have (income and savings) or what their future earning capacity will allow them to borrow. Consumption spending (spending by individuals for items such as food, cars, clothes, computers, and so forth) comprises about two-thirds of gross domestic product (GDP) in the United States. Generally, higher disposable incomes (that is, income after taxes) lead to higher levels of consumption spending. Higher levels of spending mean inventories are reduced and companies need to produce more and hire additional workers to meet sales demand. Corporations will spend to obtain supplies and workers based upon expectations of future demand. Similarly, they will invest in additional plant and equipment based upon expected future sales and income. Economic growth results in higher levels of consumer spending and corporate investment, which in turn stimulates job growth and additional demand. Slow or negative growth can lead to layoffs, pessimistic expectations, and reduced consumer and corporate spending. These effects will directly influence company profits and cash flows.

Domestic Economic Influences

Individuals can spend only what they have (income and savings) or what their future earning capacity will allow them to borrow. Consumption spending (spending by individuals for items such as food, cars, clothes, computers, and so forth) comprises about two-thirds of gross domestic product (GDP) in the United States. Generally, higher disposable incomes (that is, income after taxes) lead to higher levels of consumption spending. Higher levels of spending mean inventories are reduced and companies need to produce more and hire additional workers to meet sales demand. Corporations will spend to obtain supplies and workers based upon expectations of future demand. Similarly, they will invest in additional plant and equipment based upon expected future sales and income. Economic growth results in higher levels of consumer spending and corporate investment, which in turn stimulates job growth and additional demand. Slow or negative growth can lead to layoffs, pessimistic expectations, and reduced consumer and corporate spending. These effects will directly influence company profits and cash flows.

Domestic Economic Influences

Individuals can spend only what they have (income and savings) or what their future earning capacity will allow them to borrow. Consumption spending (spending by individuals for items such as food, cars, clothes, computers, and so forth) comprises about two-thirds of gross domestic product (GDP) in the United States. Generally, higher disposable incomes (that is, income after taxes) lead to higher levels of consumption spending. Higher levels of spending mean inventories are reduced and companies need to produce more and hire additional workers to meet sales demand. Corporations will spend to obtain supplies and workers based upon expectations of future demand. Similarly, they will invest in additional plant and equipment based upon expected future sales and income. Economic growth results in higher levels of consumer spending and corporate investment, which in turn stimulates job growth and additional demand. Slow or negative growth can lead to layoffs, pessimistic expectations, and reduced consumer and corporate spending. These effects will directly influence company profits and cash flows.

Economic conditions affect required returns, too. Investors will be more optimistic in good economic times and more willing to accept lower-risk premiums on bond and stock investments. In poor economic times, credit spreads will rise as investors want to place their funds in safer investments.

Governments shape the domestic economy by fiscal policy (government spending and taxation decisions) and monetary policy. These decisions may affect consumer disposable income (fiscal policy) and the level of interest rates as well as inflation expectations, (monetary policy) and, therefore, affect the valuation of the bond and stock markets.

Some industry sectors are sensitive to changes in consumer spending. Sales by auto manufacturers, computer firms, and other manufacturers of high-priced items will rise and fall by greater amounts over the business cycle than will food or pharmaceutical firms. Changes in interest rates affect some industries more than others, too; banks and the housing industry (and sellers of large household appliances) are sensitive to changes in interest rates more than, say, book and music publishers or restaurants.

Economic conditions affect required returns, too. Investors will be more optimistic in good economic times and more willing to accept lower-risk premiums on bond and stock investments. In poor economic times, credit spreads will rise as investors want to place their funds in safer investments.

Governments shape the domestic economy by fiscal policy (government spending and taxation decisions) and monetary policy. These decisions may affect consumer disposable income (fiscal policy) and the level of interest rates as well as inflation expectations, (monetary policy) and, therefore, affect the valuation of the bond and stock markets.

Some industry sectors are sensitive to changes in consumer spending. Sales by auto manufacturers, computer firms, and other manufacturers of high-priced items will rise and fall by greater amounts over the business cycle than will food or pharmaceutical firms. Changes in interest rates affect some industries more than others, too; banks and the housing industry (and sellers of large household appliances) are sensitive to changes in interest rates more than, say, book and music publishers or restaurants.

Economic conditions affect required returns, too. Investors will be more optimistic in good economic times and more willing to accept lower-risk premiums on bond and stock investments. In poor economic times, credit spreads will rise as investors want to place their funds in safer investments.

Governments shape the domestic economy by fiscal policy (government spending and taxation decisions) and monetary policy. These decisions may affect consumer disposable income (fiscal policy) and the level of interest rates as well as inflation expectations, (monetary policy) and, therefore, affect the valuation of the bond and stock markets.

Some industry sectors are sensitive to changes in consumer spending. Sales by auto manufacturers, computer firms, and other manufacturers of high-priced items will rise and fall by greater amounts over the business cycle than will food or pharmaceutical firms. Changes in interest rates affect some industries more than others, too; banks and the housing industry (and sellers of large household appliances) are sensitive to changes in interest rates more than, say, book and music publishers or restaurants.

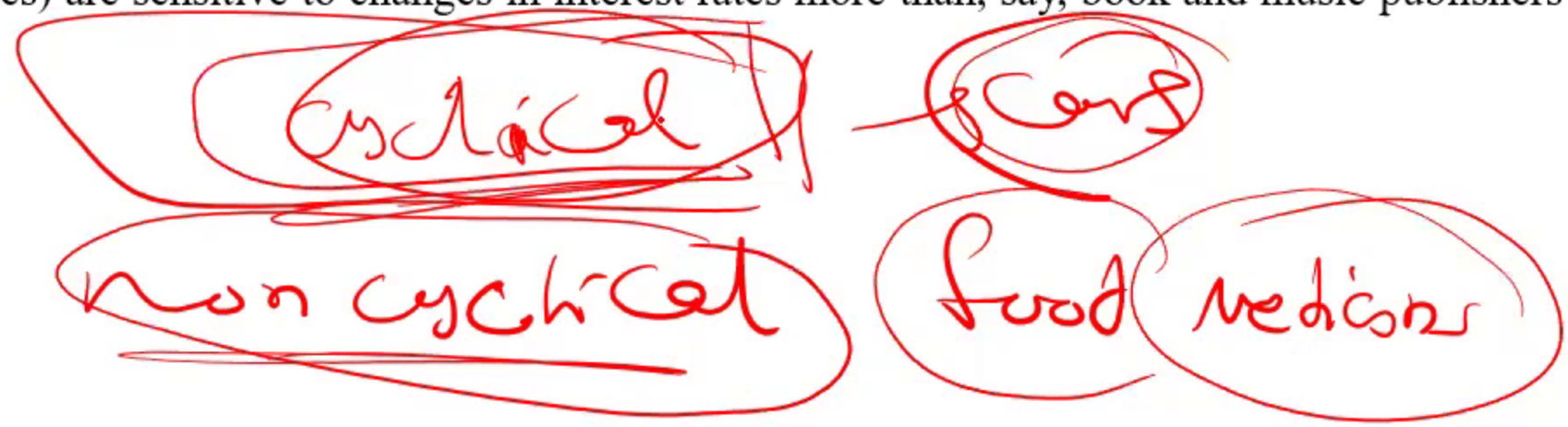
cyclical / goods

non cyclical food medicine

Economic conditions affect required returns, too. Investors will be more optimistic in good economic times and more willing to accept lower-risk premiums on bond and stock investments. In poor economic times, credit spreads will rise as investors want to place their funds in safer investments.

Governments shape the domestic economy by fiscal policy (government spending and taxation decisions) and monetary policy. These decisions may affect consumer disposable income (fiscal policy) and the level of interest rates as well as inflation expectations, (monetary policy) and, therefore, affect the valuation of the bond and stock markets.

Some industry sectors are sensitive to changes in consumer spending. Sales by auto manufacturers, computer firms, and other manufacturers of high-priced items will rise and fall by greater amounts over the business cycle than will food or pharmaceutical firms. Changes in interest rates affect some industries more than others, too; banks and the housing industry (and sellers of large household appliances) are sensitive to changes in interest rates more than, say, book and music publishers or restaurants.



Industry and Competition

A firm's profits are determined by its sales revenues, expenses, and taxes. We have mentioned taxes and some influences on sales and expenses in our discussion of global and domestic economies, but industry competition and the firm's position within the industry will have a large impact on its ability to generate profits over time. Tight competition means it will be difficult to raise prices to increase sales revenue or profitability. Nonprice forms of competition, such as customer service, product innovation, and the use of technology to the fullest extent in the manufacturing and sales processes may hurt profits by increasing expenses if the features do not generate sufficient sales. Changes in the cost and availability of raw materials, labor, and energy can adversely affect a firm's competitive place in the market.

The influences of competition and supply ultimately affect a firm's profitability and investors' perceptions of the firm's risk. This, in turn, will affect its bond and stock prices. The most attractive firms for investing in will be those with a competitive advantage over their rivals. They may offer a high-quality product, be the low-cost producer, be innovators in the use of technology, or offer the best customer support. Whatever the source of the firm's advantage is, if it can build and maintain this advantage over time it will reap above-normal profits and be an attractive investment.

Industry and Competition

A firm's profits are determined by its sales revenues, expenses, and taxes. We have mentioned taxes and some influences on sales and expenses in our discussion of global and domestic economies, but industry competition and the firm's position within the industry will have a large impact on its ability to generate profits over time. Tight competition means it will be difficult to raise prices to increase sales revenue or profitability. Nonprice forms of competition, such as customer service, product innovation, and the use of technology to the fullest extent in the manufacturing and sales processes may hurt profits by increasing expenses if the features do not generate sufficient sales. Changes in the cost and availability of raw materials, labor, and energy can adversely affect a firm's competitive place in the market.

The influences of competition and supply ultimately affect a firm's profitability and investors' perceptions of the firm's risk. This, in turn, will affect its bond and stock prices. The most attractive firms for investing in will be those with a competitive advantage over their rivals. They may offer a high-quality product, be the low-cost producer, be innovators in the use of technology, or offer the best customer support. Whatever the source of the firm's advantage is, if it can build and maintain this advantage over time it will reap above-normal profits and be an attractive investment.

Industry and Competition

A firm's profits are determined by its sales revenues, expenses, and taxes. We have mentioned taxes and some influences on sales and expenses in our discussion of global and domestic economies, but industry competition and the firm's position within the industry will have a large impact on its ability to generate profits over time. Tight competition means it will be difficult to raise prices to increase sales revenue or profitability. Nonprice forms of competition, such as customer service, product innovation, and the use of technology to the fullest extent in the manufacturing and sales processes may hurt profits by increasing expenses if the features do not generate sufficient sales. Changes in the cost and availability of raw materials, labor, and energy can adversely affect a firm's competitive place in the market.

The influences of competition and supply ultimately affect a firm's profitability and investors' perceptions of the firm's risk. This, in turn, will affect its bond and stock prices. The most attractive firms for investing in will be those with a competitive advantage over their rivals. They may offer a high-quality product, be the low-cost producer, be innovators in the use of technology, or offer the best customer support. Whatever the source of the firm's advantage is, if it can build and maintain this advantage over time it will reap above-normal profits and be an attractive investment.