CheggSolutions - Thegdp

Financial Analysis of Goodwin Technologies

Sub-subject: Financial Management

Topic: Dividend Discount Model and Intrinsic Value Calculation

Given Data and Introduction

Given:

- First dividend (D_3) = $4.25000
- Dividend growth rate for the next two years (g_4 and g_5) = 22.10000%
- Constant growth rate after fifth year ($g_{constant}$) = 4.08000%
- Required return (r) = 13.60000%

Objective:

1. Determine the horizon value at the horizon date.
2. Calculate the current intrinsic value of Goodwin Technologies.
3. Evaluate if the statement about preferring deferred tax liability over dividends is accurate.

Step-by-Step Solution:

Step 1: Calculate Dividend Values

1. Calculate D_4:

$$D_4 = D_3 \times (1 + g_4)$$ $$D_4 = 4.25000 \times (1 + 0.2210000)$$ $$D_4 = 4.25000 \times 1.2210000$$ $$D_4 = 5.18925$$

Explanation: D_4 is calculated by multiplying D_3 with the growth factor $(1 + g_4)$.

2. Calculate D_5:

$$D_5 = D_4 \times (1 + g_5)$$ $$D_5 = 5.18925 \times (1 + 0.2210000)$$ $$D_5 = 5.18925 \times 1.2210000$$ $$D_5 = 6.33439$$

Explanation: D_5 is computed by multiplying D_4 with the growth factor $(1 + g_5)$.

Step 2: Calculate the Horizon Value (H)

3. Horizon Value (H):

$$H = \frac{D_6}{r - g_{constant}}$$ $$D_6 = D_5 \times (1 + g_{constant})$$ $$D_6 = 6.33439 \times (1 + 0.0408000)$$ $$D_6 = 6.33439 \times 1.0408000$$ $$D_6 = 6.59385$$

$$H = \frac{6.59385}{0.136000 - 0.040800}$$ $$H = \frac{6.59385}{0.0952}$$ $$H = 69.24390$$

Explanation: D_6 is the dividend for the sixth year found by growing D_5 at the constant growth rate $g_{constant}$. Horizon value is then calculated using the Gordon Growth Model.

Step 3: Calculate Present Values and Intrinsic Value

4. Present Value of Dividends (PV):

$$PV_3 = \frac{D_3}{(1 + r)^3}$$ $$PV_3 = \frac{4.25000}{(1 + 0.1360000)^3}$$ $$PV_3 = \frac{4.25000}{1.468194176}$$ $$PV_3 = 2.89502$$

$$PV_4 = \frac{D_4}{(1 + r)^4}$$ $$PV_4 = \frac{5.18925}{(1 + 0.1360000)^4}$$ $$PV_4 = \frac{5.18925}{1.666222079936}$$ $$PV_4 = 3.11366$$

$$PV_5 = \frac{D_5}{(1 + r)^5}$$ $$PV_5 = \frac{6.33439}{(1.1360000)^5}$$ $$PV_5 = \frac{6.33439}{1.89228725005}$$ $$PV_5 = 3.34892$$

$$PV_H = \frac{H}{(1 + r)^5}$$ $$PV_H = \frac{69.24390}{(1.1360000)^5}$$ $$PV_H = \frac{69.24390}{1.89228725005}$$ $$PV_H = 36.59155$$

Explanation: The present values of D_3, D_4, D_5, and horizon value H are calculated using the formula $PV = \frac{D}{(1 + r)^n}$.

5. Total Intrinsic Value (IV_0):

$$IV_0 = PV_3 + PV_4 + PV_5 + PV_H$$ $$IV_0 = 2.89502 + 3.11366 + 3.34892 + 36.59155$$ $$IV_0 = 45.94915$$

Explanation: The intrinsic value is the sum of all present values of dividends and the present value of horizon value.

Final Solution:

- **Horizon Value:** $69.24390
- **Current Intrinsic Value:** $45.94915

Analysis of the Statement

- "Investors prefer the deferred tax liability that capital gains offer over dividends."

This statement can be a plausible explanation for why Goodwin Technologies hasn't paid a dividend yet. Deferred tax liability on capital gains can be more advantageous for investors compared to immediate taxation on dividends.

Chart Summary:

$$\begin{array}{|c|c|} \hline \text{Term} & \text{Value} \\ \hline \text{Horizon Value} & \$69.24 \\ \hline \text{Current Intrinsic Value} & \$45.95 \\ \hline \end{array}$$

Conclusion

Goodwin's horizon value at the horizon date is $69.24390, and the current intrinsic value of the company's stock is $45.94915. Investors' preference for deferred tax liability on capital gains could be a valid reason for the company's decision to defer dividend payments.