

Two-Stage FCFF Discount Model

This model is designed to value a firm, with two stages of growth: a period of higher growth and a subsequent period of stable growth.

For a richer version of this model, try the [fcffginzu.xls](#) spreadsheet.

Assumptions

1. The firm is expected to grow at a higher growth rate in the first period.
2. The growth rate will drop at the end of the first period to the stable growth rate.

The user has to define the following inputs:

1. Length of high growth period
2. Expected growth rate in earnings during the high growth period.
3. Capital Spending, Depreciation and Working Capital needs during the high growth period.
4. Expected growth rate in earnings during the stable growth period.
5. Inputs for the cost of capital. (Cost of equity, Cost of debt, Weights on debt and equity)

Inputs to the model

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Current EBIT =	\$5,186.00	
Current Interest Expense =	\$118.00	
Current Capital Spending	\$2,152.00	
Current Depreciation & Amort'n =	\$1,228.00	
Tax Rate on Income =	28.49%	
Current Revenues =	\$16,701.00	
Current Non-cash Working Capital	\$3,755.00	
Chg. Working Capital =	\$499.00	Last year
Cash and Marketable Securities	\$500.00	
Value of equity options issued by firm	\$1,500.00	
Book Value of Debt =	\$1,479.00	\$1,315.00
Book Value of Equity =	\$12,941.00	\$12,156.00

Weights on Debt and Equity

Is the firm publicly traded ? (Yes or No)

If yes, enter the market price per share = (in currency)
 & Number of shares outstanding = (in #)
 & Market Value of Debt = (in currency)

If no, do you want to use the book value debt ratio ? (Yes or No)
 If no, enter the debt to capital ratio to be used = (in percent)

Enter length of extraordinary growth period = (in years)

Do you want to change the debt ratio in the stable growth period?
 If yes, enter the debt ratio for the stable growth period =

Costs of Components

Do you want to enter cost of equity directly? (Yes or No)
 If yes, enter the cost of equity = (in percent)

If no, enter the inputs to the cost of equity

Beta of the stock =

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Riskfree rate= (in percent)

Risk Premium= (in percent)

Enter the cost of debt for cost of capital calculation (in percent)

Earnings Inputs

Do you want to use the historical growth rate? (Yes or No)

If yes, enter EBIT from five years ago = (in currency)

Do you have an outside estimate of growth ? (Yes or No)

If yes, enter the estimated growth: (in percent)

Do you want to calculate the growth rate from fundamentals? (Yes or No)

The following will be the inputs to the fundamental growth formulation:

ROC =

Reinv. Rate =

Do you want to change any of these inputs for the high growth period? (Yes or No)

If yes, specify the values for these inputs (Please enter all variables)

ROC =

Reinv. Rate =

Specify weights to be assigned to each of these growth rates:

Historical Growth Rate = (in percent)

Outside Prediction of Growth = (in percent)

Fundamental Estimate of Growth = (in percent)

Enter growth rate in stable growth period? (in percent)

Beta

Will the beta to change in the stable period? (Yes or No)

If yes, enter the beta for stable period =

Will the cost of debt change in the stable period? (Yes or No)

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If yes, enter the new cost of debt = (in percent)

Capital Spending, Depreciation & Working Capital

Do you want all these items to grow at the same rate as earnings ? Yes (Yes or No)

If not, enter the growth rates for each of the following items:

	Capital Spending	Depreciation	Revenues	
High Growth	6%	6%	6%	(in percent)
Stable Growth	Do not enter	Do not enter	6%	(in percent)

Do you want to keep the current fraction of working capital to revenues Yes (Yes or No)

Specify working capital as a percent of revenues: (in percent)

Capital Spending and Depreciation in Stable Growth

Is capital spending to be offset by depreciation in stable period? No (Yes or No)

Do you want your reinvestment to be computed from fundamentals? Yes

Return on capital in perpetuity 12%

If no, do you want to enter capital expenditure as % of depreciation 120% (in percent)

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Output from the program

Cost of Equity =

9.70%

Equity/(Debt+Equity) =

98.56%

After-tax Cost of debt =

3.93%

Debt/(Debt +Equity) =

1.44%

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Cost of Capital =

9.62%

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Current EBIT * (1 - tax rate) =	\$3,708.51
- (Capital Spending - Depreciation)	\$924.00
- Change in Working Capital	\$499.00
Current FCFF	\$2,285.51

Growth Rate in Earnings per share

	<i>Growth Rate</i>	<i>Weight</i>
Historical Growth =	45.33%	0.00%
Outside Estimates =	12.50%	0.00%
Fundamental Growth =	10.56%	100.00%
<i>Weighted Average</i>	<i>10.56%</i>	

Growth Rate in capital spending, depreciation and working capital

	<i>High Growth</i>	<i>Stable Growth</i>
Growth rate in capital spending =	10.56%	Do not enter
Growth rate in depreciation =	10.56%	Do not enter
Growth rate in revenues =	10.56%	6.00%

Working Capital as percent of revenues = 22.48% (in percent)

The FCFE for the high growth phase are shown below (upto 10 years)

	1	2	3	4
EBIT * (1 - tax rate)	\$4,100.25	\$4,533.38	\$5,012.26	\$5,541.73
- (CapEx-Depreciation)	\$1,021.61	\$1,129.52	\$1,248.84	\$1,380.76
-Chg. Working Capital	\$396.66	\$438.56	\$484.88	\$536.10
Free Cashflow to Firm	\$2,681.99	\$2,965.30	\$3,278.54	\$3,624.87
Present Value	\$2,446.69	\$2,467.82	\$2,489.13	\$2,510.62

Growth Rate in Stable Phase =	6.00%
FCFF in Stable Phase =	\$3,247.38
Cost of Equity in Stable Phase =	9.70%
Equity/ (Equity + Debt) =	98.56%
AT Cost of Debt in Stable Phase =	3.93%
Debt/ (Equity + Debt) =	1.44%

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Cost of Capital in Stable Phase =	9.62%
Value at the end of growth phase =	\$89,782.26

Present Value of FCFF in high growth phase =	\$12,446.56
Present Value of Terminal Value of Firm =	\$56,728.59
Value of the firm =	\$69,175.15
Cash and Marketable Securities =	\$500.00
Market Value of outstanding debt =	\$1,822.00
Market Value of Equity =	\$67,853.15
Value of Equity options issued by the company =	\$1,500.00
Market Value of Equity/share =	\$66.78

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5		Terminal Year
\$6,127.13		\$6,494.75
\$1,526.62		\$2,875.14
\$592.74		\$372.24
\$4,007.78		\$3,247.38
\$2,532.30		