RESEARCH REVIEW JOURNALS
Volume-03
Issue-12
December -2018

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com [UGC Listed Journal]

Validity of Discounted Cash Flow Valuation

[1]Parakkal Nirmal Kumar, [2]Vishal Mohan & [3]Alwin Paul Jose

[1,2,3]B.Com F&A, Department of Professional Studies, Christ University (India)

ARTICLE DETAILS

Article History
Published Online: 10 December 2018

Keywords
Discounted Cash Flow model, Computation of Discounted Cash Flow, Limitations, Comparision with other models

ABSTRACT

Titled "Discounted Cash Flow" aims to talk about the Discounted Cash Flow model of valuing companies, the factors being considered for the computation and those that affect the model, the reasons for the accuracy of the model, the limitations involved in the model and how different it is from the other models used for the valuation of companies. To check the validity and the accuracy of the results discounted method of valuating companies and how effective has it been. To check the validity of the model, the intrinsic value of the company using DISCOUNTED CASH FLOW as on 31-03-2018 and how true the valuation has turned out to be by comparing it with the actual prices.

1. Introduction

Investors buy and sell stocks based on the values that are traded in the exchange. The price listed on the exchange might be different from the fundamental or intrinsic value. The price may either be over-valued or under-valued depending on the price listed and the intrinsic value determined. The value the investor will gain or lose in the future will depend on the price at which it is being bought and the intrinsic value. More profit will be generated if the price of the security listed is less than the intrinsic value and vice versa.

For computing the intrinsic value the investor needs to fundamentally analyse the company and for doing this investors have different methods of computing the intrinsic value based on their preferences and likings. There most common used techniques are Discounted Cash Flow method, Comparable transaction method, multiples method and market valuation and many more with each method having its own pros and cons and applicability.

This research aims to focus more and talk about the discounted cash flow method which is presumed to be one of the most widely used techniques amongst investors for the valuation of companies.

Discounted Cash flow is used in feasibility studies and investment decisions. It is a method used for valuing a company, project or an investment opportunity using the time value of money. The model involves factors such as free cash flow, growth rate, discount rate and terminal value.

Free Cash Flow, it is a measure that shows the cash produced by the firm available for debt and equity after the company's expenses and investing decisions. It can be used by the company for providing dividends or reducing debt or for any other purpose.

Net FCFF =EBIT-Taxes + Depreciation-Capital expenditure – Increase in Net Working Capital.

FCFE = FCFF – Interest expense + Principal Issue – New Debt issued.

Growth Rate, it measures the rate at which the firm's cash flows increases per year. The growth is computed as per the preference and discretion of the investor. The growth rate is found out by

A Perpetuity Growth rate is the rate that the company is hoping to grow in the future. This Growth rate is needed for preparing the Terminal Value.

Discounting rate, it is rate at which the future value of the funds are converted to its present value. Through the process of discounting the present value of the future benefits are derived. InDISCOUNTED CASH FLOW the discount rates used for computation in the WACC. WACC is referred to as the firms cost of capital for raising the funds. It is the cost the pays to the security holders for financing its assets.

Terminal Value, itis the long-term valuation of the company's growth when the future cash flows are certain. Normally Terminal value in DISCOUNTED CASH FLOW Valuation is calculated by the Gordons growth Model

Terminal value = Cash flow for the last year (1+ growth rate) / (discount rate – growth rate).

The growth rate used in this formula is perpetuity growth rate and calculated on the basis of 3 years as a whole.

a) Advantages of Discounted Cash Flows

- It is considered to offer the closest estimate while computing a stock's intrinsic value. This gives sound judgements assuming that the investor is confident on his judgements.
- DISCOUNTED CASH FLOW relies more onfree cash flow which makes it more reliable than others since it doesn't depend on subjective accounting policies.
- The influence on external factors like short-term market conditions or non-economic factors.

RRIJM 2015, All Rights Reserved

- The applicability of the DISCOUNTED CASH FLOW model increases when there is high degree of confidence regarding the future cash flows.

b) Limitations of the Model

- The accuracy of the estimate is highly subject to the accuracy of the assumption made. Any small adjustment could affect the valuation made.
- It depends on the estimation of the future performance of the company. Hence the company's transparency would affect the valuation.
- Any change in the company's future performance would hinder the accuracy of the valuation made.(Street of Walls, 2013)

c) Comparisons with other models

The other methods that are compared with the discounted cash flow method are :

1) Comparable Company Analysis: It is a method to value the company by using metrics of other businesses of similar nature. In comparable company analysis a number of similar companies of similar nature is found out and the Enterprise value and ratios for each company is calculated and then compared with the company which has to valuated. It can also be valued by using the purchase price of the company and based on transactions of recent acquisitions and then compared.
2) Two Column Valuation Method: Two components of intrinsic value calculation is taken into consideration. The first component is value of investments, stocks, bonds and cash and cash equivalents. While the second component is earnings from sources other than investments and insurance underwriting.
3) Precedent Transaction Analysis: It is a valuation method which checks similar companies in the past prices are paid for the company. It is also known as M&A Companies. It creates a reasonable estimate of premiums for other publicly traded companies. In this model companies of similar nature are found out with similar financial characteristics and the type if transaction and characteristics of the buyer should be similar.
4) Leverage Buyout Analysis: This is a way of valuation of company which determines the price that would be paid by a prospective financial buyer of the target company. The highest purchase price would be considered after the following are taken into consideration are Companies Free cash flows, Required Hurdle Rate of Equity Investors, The financing structure, interest rates and banking covenants by the lenders.

2. Review of Literature

a. (Steiger, 2008):-This paper closely examines theoretical and practical aspects of the widely used discounted cash flows (DCF) valuation method. It assesses its potentials as well as several weaknesses. A special emphasize is being put on the valuation of companies using the DCF method. The DCF method is subject to massive assumption bias and even slight changes in the underlying assumptions of an analysis can drastically alter the valuation results.

b. (Folger, 2017) :This article gives a brief description on how to analyse Discounted Cash Flows, It finds out the forecast Period and the forecasting and the forecasting revenue growth of companies and how to calculate them, It talks about the factors affecting Discounted Cash Flow and how to calculate discounted cash flow. The Pros and Cons of Discounted Cash Flows are also stated. An Practical Example for each step in DCF model is also mentioned.

c. (Le, 2017): The value of an asset is the future cash flow it can generate discounted at an opportunity rate that reflects the risks of the asset. Thus, the discounted cash flow (DCF) method is widely used to estimate the true value of an asset. On the stock market, the price of an equity or a stock determined by the market may differ from its true value to the extent that it is overvalued or undervalued. In that belief, the investment theory suggests to buy or hold a stock if it is undervalued and not to buy or sell it if it is overvalued.

d. (Begović, Momčilović, & Jovin, 2013) :The assessment of the firm value by discounting cash flows may be achieved through free cash flow to equity (FCFE) and free cash flow to the firm (FCFF).The aim of this paper is to find the similarities and differences, and advantages and limitations of these two approaches to assess the firm value. It talks about the advantages and disadvantages of Discounted Cash Flow

e. (Street of Walls, 2013): While there are many different possible techniques to arrive at the value of a company a lot of which are company, industry, or situation specific there is a relatively small subset of generally accepted valuation techniques that come into play quite frequently, in many different scenarios. This Article talks about the Different methods for Valuating a company and the comparison of these methods with the pros and cons of the methods.

3. Research Design:

a) Statement of Problem:

- The research aims to analyse the DCF model, the usage of the model.
- To measure the validity and the accuracy of the results discounted method of valuating companies and how effective has it been.
- Provide an assessment of automobile companies using this and computation of the intrinsic value through this model

b) Sources of Data:

This research involves only secondary data. Secondary data is the data which is collected by someone other than the user. The types of Secondary data used for this Research are online Articles, Journals, Seminar Papers, Research

RRIJM 2015, All Rights Reserved

Papers. Information about the companies is obtained from the Company Reports, moneycontrol.com.

c) Data Tool Used

The Tool used for this Research is MS Excel.

d) Hypothesis

The Discounted cash flow model of valuating companies is valid and more reliable than other models.

e) Expected Outcome:

By undertaking this research, we are trying to prove if the Discounted Cash Flow Model of Valuing companies are valid and the better way of calculating the value of a company.

It is expected that the DCF Model of valuation helps to predict the stock market to an extent when there is no major change in the market like stock market crashes. It helps in the investor to either buy or sell or hold the shares.

f) Limitations of the Study:

- ❖ Difficulty in making assumptions and estimations.
- ❖ Reliable supporting reports on the company.
- ❖ Uncertainty in future performance of the company.
- ❖ Lack of transparency.

4. Data Analysis and Interpretation:

For the Analysis in this research, Discounted Cash flow is calculated for Maruti Suzuki in the Automotive Industry for checking the validity of Discounted Cash flow. The analysis of the company using the model is done below.

Business Overview of Maruti Suzuki

Maruti Suzuki India Limited is a company which is engaged in the automobile sector. It deals with purchase and sale of motor vehicles and its components. It also provides other activities like second hand car sales and car financing. The company's products include Alto 800, Alto K10, Wagon R, Celerio, Ritz, Swift, Ertiga Omni, Gypsy and Ciaz. It also provides additional services like Maruti Finance, True Value, Driving School, and Genuine Accessories. Maruti has 5 plants with an overall capacity of about 1.5 million vehicles per year.

Computation Methodology

For computing the Discounted Cash Flows of the Company, The Financials Statements of the Companies where looked into.

FCFF (Free Cash Flow for the Firm) = Net Income + non-cash charges + Interest (1+ Tax Rate) – Investments in Working Capital

Maruti Suzuki India	
Step 1	Calculation of FCFF
Step 2	Calculation of WACC
Step 3	Compute Growth rate
Step 4	Find Pv of Future cashflow
Step 5	Find Terminal value
Step 6	Find Equity value and value per share

Analysis

FCFF	9960.29
WACC	(Equity Capital/Total Financing) *Cost of Equity + (Debt Capital/Total Financing) *Cost of Debt

Cost of Equity	Rf+(Rm-Rf) *Beta

Rf	7.68%
Rm	14%
Beta	1.81

WACC	19.12%
Growth Rate	18%
Perpetual Growth Rate	12%

RRIJM 2015, All Rights Reserved

Free Cash Flow	
Year	Amount
2017-18	9960.29
2018-19	11753.1422
2019-20	13868.7078
2020-21	16365.0752

Terminal Value	FCFF(1+G)/(WACC-G)
Terminal Value(in Rs)	257457.077

Present Value of Cash Flows

Year	Amount
2017-18	9960.29
2018-19	9866.7068
2019-20	9774.0029
2020-21	9682.1699
Terminal Value	152320.91
Total	191604.08
Shares Outstanding	30.2

DCF Value **6344.506**

Revenue Forecast			
Particulars	FY 18-19	FY 19-20	FY 20-21
Total Revenue from Operations	89545.7	101584.8	114861.9

Assumptions:

- The Growth Rate is calculated by Compounded Average Growth Rate formulaof the last 4 years
- The Capital Expenditure for the company is taken to be the Cash Flow from Investing Activities.
- The Perpetual Growth Rate for the Company is taken as the Compounded Average Growth Rate of the Index of last four Years

5. Findings and Suggestions:

Rating Matrix		
Rating		Sell
Target	:	Rs.6344.5
Target Period	:	90 Days
Potential Upside	:	0

Data verified by Nirmal Kumar, Alwin Jose and Vishal

From the above analysis it is noticed that the Discounted Cash Flow Valuation that we find for Maruti Suzuki is 6433.5 while the Actual price of the stock is 7676(As on 14-12-2018).It is found out that the company is being overvalued it is mainly because of the good sales and the debtless component of the company. The current valuation is nearly 21% more than its intrinsic value.

Though the company's Intrinsic value is lower than the stock price, the company offers a good component to the investors and is a potential to invest. With its increase in market share and sale over the years and a good management shows that the company has growth potential. The share holders have more access/share to the earnings as there's no debt.

Maruti Suzukihas outperformed the Auto industry which returned -20.6% over the past year.

Maruti Suzuki India's revenue growth rate is expected to exceed the Indian market average growth rate.

One of the reasons for growth of Maruti Suzuki was attractiveness of the Indian markets due to improving

RRIJM 2015, All Rights Reserved

infrastructure, good growth prospects and stagnation in European markets. Maruti Suzuki has a good cost reduction programmes as it effectively manages the growth of increase in the insurance costs and the petrol prices which are a threat to the company.

It also has a Localisation Programme which the company is trying to pursue in the Automatic Electronics and components and the management has started with effective planning for the same. This has caused a main increase in the revenue from the rural areas more than the urban areas. Since the Exports are facing problems like economic slowdown and trade protection, the company may not meet its sales in exporting like last years figures.

Ratios	
Current Ratio	0.51
Debt Equity Ratio	Nil
Enterprise Value / Revenue	18.81
Price / Earnings	18.92
Price / Book Value	6.41
Return on Equity	18.51
Return on Capital Employed	17.7

About the Method of Valuation

From the Analysis it is found out that the Discounted Cash Flow Valuation is a reliable form of valuation and can be used for company valuation. The DCF model helped in finding the free cash flow that'll be available to the investors of the company in the coming years. This acts as a valuable base for the decisions of the investors. The company performance is reflected and the earning the shareholders get is also determined.

Maruti Suzuki is a must held stock in the portfolio as according to the localization and cost reduction programmes the sales figures and market capitalization of the company should increase. Due to the increase in demand in rural areas and the increase in usage of petrol cars the company would be able to capitalize on the same. The potential future value is taken into consideration for the computation, so this helps the investors in taking long term decisions.

6. Conclusion

DCF assists us in finding the valuation of companies. Though based on assumptions and estimates, when done right provides a base for investors. The DCF will guide the investor in valuing a company. It's reliable because it takes into consideration the free cash flow of the company which is available to the investors. This will help them in evaluating the amount the company has for the investors.

This widely used model with its own pros and cons. Since it is based on assumption even a slight error will change the overall picture and can deceive the investor, so this needs to be done with due care. This is not the sole base for valuing a company but can be used as one of the major criteria's during valuation. A better judgment regarding the intrinsic value can be made with it this might not be suitable for companies which are in the early stage and haven't generated much cash but has a future.However; through estimates even this can be found.

DCF is a method useful for computation. Since it involves factors like growth, the future prospects of the company are also analysed.

References

1. (2013). Retrieved from Street of Walls: http://www.streetofwalls.com/finance-training-courses/investment-banking-technical-training/valuation-techniques-overview/
2. Begović, S. V., Momčilović, M., & Jovin, S. (2013). ADVANTAGES AND LIMITATIONS OF THE DISCOUNTED CASH FLOW TO FIRM VALUATION.
3. Discounted Cash Flow (DCF). (n.d.). Retrieved from www.investopedia.com: https://www.investopedia.com/terms/d/dcf.asp
4. Folger, J. (2017, May). Discounted Cash Flow Analysis. Retrieved from Investopedia: https://www.investopedia.com/university/dcf/
5. Le, A. (2017). Equity Valuation Using Discounted Cash Flow Method. Arcada.
6. Steiger, F. (2008). The Validity of Company Valuation.

RRIJM 2015, All Rights Reserved