

Calculation of Compounded Annual Growth Rate of Bharat Forge Ltd. for Finding its Financial Performance

Dr. Avinash H. Ghadage

NBN Sinhgad School Of Management Studies, Ambegaon, Pune

Email : navinghadage@gmail.com

Ms. Pooja Vasant Mane

Email:pooja.ghadage1@gmail.com

Abstract

Growth rates are utilized by analysts, investors and a company's management to evaluate a firm's growth periodically and make estimations about its future performance. Basically growth rates are calculated for a firm's earnings, sales or cash flow, but investors also look at growth rates for other reasons like calculate Price-Earnings ratios or Price to book value ratio. When Public Limited companies publish report of quarterly earnings, the heading figures are mostly earnings and revenue, along with the growth rates, quarter over quarter or year over year for the same company.

Keywords: Growth rate, compounded annualized rate, gross domestic product, Price-Earnings ratios

1. Introduction

Growth rates refer to the percentage change of a specific variable in specific time period and given a certain context. For investors, growth rates typically represent the compounded annualized rate of growth of a company's revenues, earnings, dividends etc. Growth rates are used to express the annual change in a variable as a percentage

1.1 Meaning of Growth rate

A growth rate is a measure of growth from one period to another using percentage terms. Growth rates are used to express the annual change in a variable as a percentage.

1.2 Types of Growth rates

1.2.1 Economic Growth Rate

An economic growth rate is derived as the annual rate of change at which a country's GDP increases or decreases. This growth rate is used to measure an economy's recession or expansion. If the income within a country declines for two consecutive quarters, it is considered to be in a recession. On the contrary, if the country has a growth in income for two consecutive quarters, it is considered to be expanding the increase in value of the goods and services produced by an economy.

1.2.2 Compounded Annual Growth Rate (CAGR)

Compounded annual growth rate (CAGR) is the rate of return required for an investment to grow from its beginning balance to its ending balance, assuming the profits were reinvested at the end of each year of the investment's lifespan. It is a useful measure of growth over multiple time periods. It the growth rate which gets from the initial investment value to the ending investment value if you assume that the investment has been compounding over the time period.

Formula

$$\text{CAGR} = (\text{EV} / \text{BV})^{1/n} - 1$$

EV: Ending value of Investment

BV: Beginning value of Investment

n: Number of years/months

1.3 Importance of Compounded Annual Growth Rate (CAGR)

Though average annual return is a common measure for investments, CAGR is a better measure of an investment's return over time, because it takes investment losses into consideration. CAGR's formula only includes one initial cash outflow and one ending cash inflow to find out an investment's return. It can help to an investor to compare alternatives for their capital or make forecasts of future values. The compounded annual growth rate can be used to calculate the average growth of a single investment. Due to market volatility, the year wise growth of an investment will be erratic and uneven. An investment may increase in value by 10% in one year, decrease in value by -4% the following year and increase in value by 5% in the next. CAGR helps smooth returns when growth rates are expected to be volatile and inconsistent.

1.4 How to Calculate CAGR

Step 1: Divide the value of an investment at the end of the period by its value at the beginning of that period.

Step 2: Raise the result to an exponent of one divided by the number of years.

Step 3: Subtract one from the subsequent result.

1.5 Applicability of Compounded Annual Growth Rate (CAGR):

- i. CAGR can be used to track the performance of various business measures of one or multiple companies.
- ii. Comparing CAGRs of business activities across similar companies will help evaluate competitive weaknesses and strengths.
- iii. Before the CAGR calculation, the investor will need to know the fractional remainder of the holding period.
- iv. CAGR measures the return on an investment over a certain period of time.
- v. It is a specific type of growth rate used to measure an investment's return or a company's performance.
- vi. CAGR is a widely used metric due to its simplicity and flexibility, and many firms will use it to report and forecast earnings growth.

2. Review of Literature

- i. L. Egghe (1992) in research paper *“Calculation of Growth models based on growth rates and its applicability,” Scientometrics, Vol -25, No 1, page no 5-46.* The author has classified growth models by using two types of growth rates; he concluded that exponential growth model is best model.
- ii. Dr. Arjun Yallappa Pangannavar, (November 2015) *“A Study of Trends in India's Economic Growth since 1951: The Inclusive Growth Approach”*, this paper focuses on the history of India's economic growth under the 'Nehru-Mahalanobis Economic Growth Model' (NMEGM) and 'Narsimhrao-Manmohan Singh Economic Growth Model' (NMSEGM). The NMEGM continued till 1990 unceasingly; Indira Gandhi's social control had supported the model to place India's economic growth at a high level.

2.1 Research Gap

Historical growth rate is one of the simplest methods of estimating future growth of an industry. However, historically high growth rates do not always indicate a high rate of growth looking into the future as industrial and economic conditions change constantly and are often cyclical. Hence there is need of finding compounded annual growth rate (CAGR) of a company to take a investment decision. Some times company have positive or negative growth for corresponding years, hence due to ups and downs in growth rate, analyst cannot draw the conclusion. By calculating CAGR he can understand real picture of business.

3. Research Methodology

3.1 Research Type:

This research comes under Analytical research type, because it is an analysis of financial statement of the targeted company from year 2015 to 2019.

3.2 Objectives of the study

- i. To evaluate financial performance of the company.
- ii. To calculate compounded annual growth rate of the company.

3.3 Hypothesis of the Study

H0: CAGR of company is not fast moving.

H1 CAGR of company is fast moving.

3.4 Sample Selection

There are 23 listed automotive companies in Pune region; here researcher has selected Bharat Forge Ltd. Pune for the study.

3.5 Data Collection

This research is based on secondary data, which is collected from financial statement of Bharat Forge Ltd. Pune from year 2015 to 2019.

4. Data Analysis

Company Name: Bharat Forge Ltd. Pune

4.1 Calculation of Growth Rate and Compounded Annual Growth Rate

Particulars	Amount in Crores					CAGR
	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	
Revenue	7,761.50	6,941.28	6,515.42	8499.70	10348.5	0.075
Total Expenses	6,681.98	5,970.00	5,697.10	7208.11	8738.17	0.069
Dividend per Share (Rs)	174.60	267.7	69.84	209.52	0.00	0.047
Earning per Share (Rs)	32.76	29.15	15.13	16.38	22.17	-0.093
Dividend Pay Out Ratio = Div. per share/Earning per share	5.33	9.18	4.62	12.79	0.00	-1.000
Net profit after tax (In Cr.)	759.56	675.36	710.70	754.35	1043.97	0.083
% of Net Profit with Revenue	9.8%	9.7%	10.9%	8.9%	10.1%	
Equity Capital including Reserve & Surplus (In Cr.)	3,444.16	3413.22	4116.37	4651.71	5376.06	0.118
Return on Equity = Net profit/Equity capital incl. Reserve	22%	20%	17%	16%	19%	-0.031
Growth rate = (1- dividend pay out ratio)*Return on Equity	-0.95	-1.62	-0.62	-1.91	0.19	

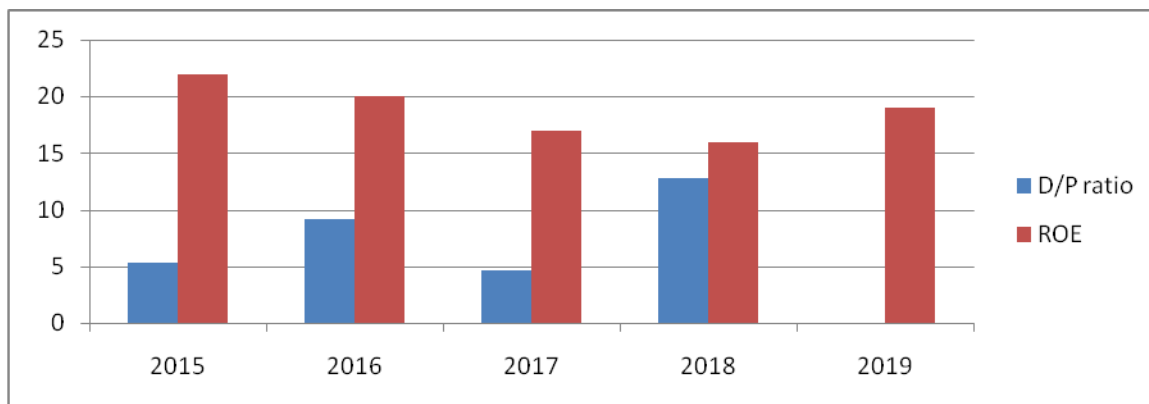
Table 1: Self generated from Annual Report of Company

Interpretations:

1. Above table 1 shows that negative normal growth rate exists in the company from year 2015 to 2018, for year 2019 it is positive. Company should adjust dividend pay out ratio with net profit.
2. Compounded annual growth rate in revenue is positive i.e. 0.075, which is less; it shows that company is growing slowly.
3. Compounded annual growth rate in Net profit is 0.083, it is less, but increasing slowly than return on equity.
4. Annual report shows that company has not declared dividend for year 2019, so CAGR up to period 2018 is 0.047, it is also growing.
5. Company's Equity capital and reserve and surplus is increasing, so there is positive growth in CAGR.

4.2 Graphical Representation

4.2.1 Performance of Dividend payout ratio and Return on Equity



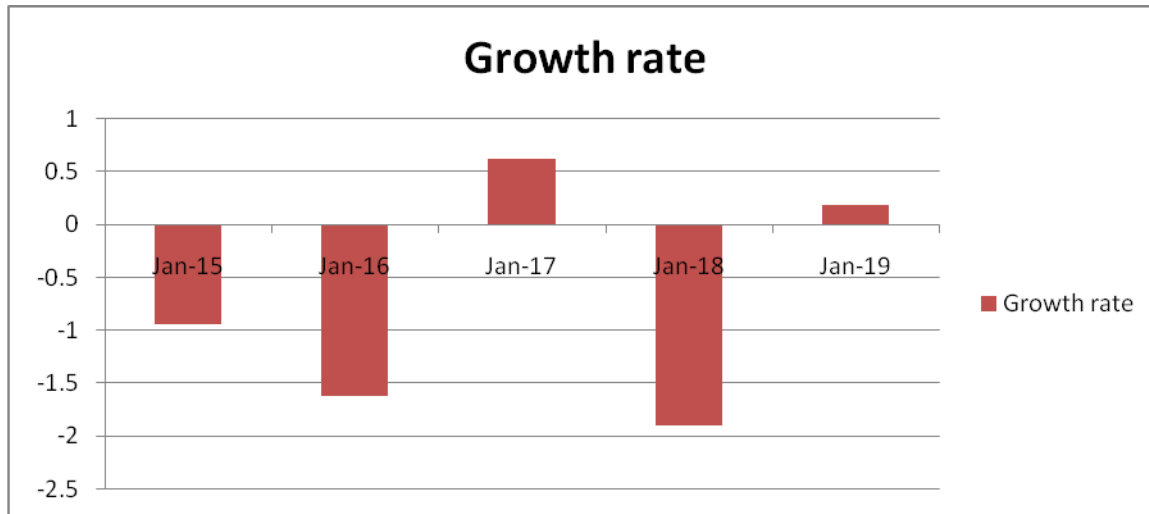
Graph: 1 (Source: Table 1)

Interpretation:

1. Above graph shows that company's Return on Equity is 20% to 22%, but company is generating 9% to 10% of profit as compared to its revenue, it shows that company is not generating considerable profit but paying good dividend.

2. During year 2019 company has not declared dividend to the shareholders, it shows that company revenue is not increasing by that extent at which dividend is paying.

4.2.2 Performance of Annual Growth rate



Graph 2 (Source: Table 1)

Interpretation

Above Graph 2 shows that, there is negative annual growth in the company, excluding year 2017 & 2019, it shows that company should control the expenses and increase the profit.

5. Findings

1. CAGR in Net profit is 8% to 9%, it shows that company is not generating considerable profit but dividend payout ratio is high.
2. Normal annual growth rate is showing negative trend, but for year 2019 it is positive.
3. CAGR in dividend paid per share from period 2015 to 2018 is 0.047, it is also growing.

6. Limitations of study

- i. CAGR does not reflect investment risk.
- ii. In case of newly started company CAGR doesn't work.
- iii. To use CAGR as a tool, analyst should take at least five years data, and then it gives correct and acceptable result.

7. Conclusion

Bharat forge Ltd should increase net profit to achieve excellent annual growth rate and compounded annual growth rate, which reflect financial performance of company. Company should maintain dividend payout ratio with return of equity ratio to pay stable dividend to the shareholders.

References

1. www.Bharatforge.com
2. Investopedia.com