Corroborate Benjamin Graham's Approach of Valuing Equity with Special Reference to Indian Capital Market

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Abstract

In this research we reconnoiter the effectiveness of Benjamin Graham's formula for the Indian market and calculated the returns on BSE100 stocks for a tenure of a decade. Benjamin Graham devised a technique to calculate intrinsic value of stocks. His approach emphasized on buying the stocks with market value less than intrinsic value and selling the stocks with market value less than the intrinsic value. This strategy helped him to invest in stocks with less risk. The technique was originally developed by Graham in 1962 and reviewed by him in 1974. He offered a simple and effective formula to calculate the stock's intrinsic value. Graham's formula is used to measure an individual company's intrinsic value. In this paper we wanted to study the effectiveness of Benjamin Graham's formula on BSE100 stocks, to find out if the value investing method works. This method also helps investor to swiftly and precisely categorize underrated companies and expensive companies. We have conducted research based on past 10 years' data to validate our findings.

Keywords: mutual funds, investment performance, Alpha, Beta, standard deviation, R squared, sharpe ratio, treynor ratio and jensen's Alpha.

JEL Code: D92, G11, G12, F21, F36

1. Introduction

Benjamin Graham was not only the greatest investor ever lived but he is also regarded as the father of value investing. Graham devised a formula to calculate intrinsic value of stocks. His approach emphasized on buying the stocks with market value less than intrinsic value and selling the stocks with market value less than the intrinsic value. This strategy helped him to invest in stocks with less risk. The formula was originally developed by Benjamin Graham in 1962 and revised in 1974. Instead of seeking a way to produce above average returns Graham proposed this method to reduce risk. Graham's formula requires inputs such as trailing twelve month (ttm) earnings per share, company's long term growth rate and AAA corporate bond rate. The revised formula consider the AAA bond rates as it takes into consideration market fluctuations according to the country's economic condition. The growth rate of the company is dependent upon the investors assumption and analysis or next seven to ten years.

The Benjamin Graham formula was developed considering the US markets, we made some appropriate changes which were required to be made in the formula to adapt to the Indian market. Variables such as the average yield on the 10 year of rating AAA corporate bonds and the current yield on the 10 year Government Bond of rating AAA.

Benjamin Graham felt that investors should view themselves as owners of business, with the aim of buying a sound and expanding business regardless of what the stock market is. Investors should invest in companies based on earnings, tangible assets, dividends, financial strength and stability, and quality of management.

In this research we wanted to explore the effectiveness of the Graham's formula for the Indian market and calculated the returns on BSE100 stocks over a period of 10 years.

2. Literature Review

Bierig, R. F. (2000). In this paper the author studies various techniques suggested by Benjamin Graham. The author explains significance of Value Investing Philosophy as designed by Benjamin Graham. The technique discussed in this paper help us select Value Stocks using bottom up approach. The paper also discussed various investors who follow the investment style of Benjamin Graham and their thoughts on Value Investing.

Graham, B. (1965). This book named;"The intelligent investor" shows a investment methodology Instead of seeking a way to produce above average returns Graham proposed this method to reduce risk. Graham's formula requires inputs such as trailing twelve month (ttm) earnings per share, company's long term growth rate and AAA corporate bond rate. The revised formula consider the AAA bond rates as it takes into consideration market fluctuations according to the country's economic condition.

Bhatt, S. (2013) One of the most popular concept to evaluate banks is CAMELS Rating. The concepts was once popularly used by Reserve Bank of India to rank systemically important banks. In today"s dynamic world trying to cope up with the aftermath of subprime crisis and the euro zone crisis we would like to revisit a technique known as CAMELS Rating System. We have selected top 8 banks by marketcap during the period of study including Pubic Sector Undertaking and Private Sector undertaking. This technique evaluates banks actions along with banks stability on Capital adequacy ratio, Asset quality ratio, Management quality ratio, Earning ratio, Liquidity ratios and Sensitivity ratio. This technique acts as a measure tool to differentiate between good banks and average banks from an investment perspective.

Bhatt, S. (2013). This research paper examines performance of top twelve Indian mutual funds by Asset Under Management(AUM). We use seven portfolio performance measurement parameters like Alpha, Beta, Standard Deviation, R Squared, Sharpe Ratio, Treynor Ratio and Jensen's Alpha. The study reveals which amongst these mutual fund is the best performer based on all these parameters and the benchmark taken for this is NIFTY Index. The mutual funds selected are HDFC Top 200 Fund, Franklin India Bluechip Fund, ICICI Prudential Focused Bluechip Equity Fund, DSPBR Top 100 Equity Fund, Birla Sun Life Equity Fund, DSPBR Top 100 Equity Fund, UTI Mastershare Fund, Reliance Equity Opportunity Fund, SBI Magnum Equity, Reliance Top 200 Fund, SBI Bluechip Fund, ICICI Prudential Top 200 Fund, Principal Large Cap Fund. This study is primarily done to evaluate performance of the select mutual funds over a period of five years.

Bhatt, S. (2014). In this paper we evaluate performance of Indian Mutual Funds in ELSS(Equity Linked Savings Scheme) category. We have selected 28 out of 43 ELSS Plans available in Indian Market; the schemes that are left out are new and do not have a track record of more than 3 years at the time of study. We have attempted to measure the fund performance on Fama-French Model. We have tried to answer using this model as to whether the return generated by Fund is due to Fund Managers ability to pick stocks and diversify or due to common stock portfolio. This is demonstrated from four parameters to decode return using Fama & French Model. We have collected daily NAV for three years for the stated funds to arrive at the stated conclusion. Our study suggest that, Religare Tax Plan and Reliance Taxsaver are the best performing ELSS funds on the basis of Fama-French Model, Jensen's Alpha and Sharpe Ratio over the rest of 28 funds. This is because majority of return is due to Compensation for Diversification and Net Selectivity. This is a benchmark study as it not only give reason for good return using Fama & French Model but also measures portfolio performance using Jensen's Alpha and Sharpe Ratio.

Bhatt, S. (2016) The objective of this paper is to have a broad understanding of the CANSLIM theory of investment and also to identify stocks using this theory and to use it as a tool for investment. The hypothesis of the study is to check if the identified stocks outperform or they are in line with the index Nifty 50 of the national stock exchange. The interpretation of the data, the values required for the seven abbreviations of the CANSLIM approach. The data collated in the excel sheet and accordingly the stocks that fulfill the CANSLIM criteria were identified. Hence the second best stocks i.e which fulfilled 5 out of 7 mandates for can slim are selected. The returns of the above selected stocks are then compared with the returns of the index nifty 50.

Bhatt, S. (2016). In this paper, we have calculated Graham Harvey Measures for top ten ELSS funds in India according to their Asset Under Management. ELSS fund are selected as they have more than 95% composition of equity component and lock in period of five years. Graham and Harvey in their research paper "Market timing ability and volatility implied in investment newsletters' asset allocation recommendations"; discusses the methodology to predict market timing to alter their investments for portfolio managers. They introduced two new performance measures for a Fund/Portfolio. Both measures provide different relative performance valuation, with respect to Market Index's Return – Risk. Sharpe ratio, although a useful metric, suffers lack of benchmarking information. Sharpe Ratio is absolute measure of performance. Since the Graham-Harvey research is based on long-term prospect of the Portfolio investment, ELSS funds are taken for research. The performance of ELSS funds has been evaluated with the help of Graham and Harvey Measure and Sharpe Ratio. Our finding suggest that Graham and Harvey Measures are superior to Sharpe ratio for performance grading. Due to paucity of time and resources, the paper research is limited to evaluating performance of ELSS funds for period of April 2007 to December 2012 using Graham Harvey Measure.

3. Data Analysis

To evaluate the intrinsic value of stocks using the Benjamin Graham formula, we used the two company specific inputs the earnings growth rate and the trailing twelve month EPS, and market specific inputs were average AAA bond rate for past 10 years and current bond rate, both as per the Indian market. We also used the current market price of the stocks to arrive at the relative graham value" (RGV).

$$V=EPS*(8.5+2G)*8.5/Y \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

To apply graham's approach to a buy or sell decision, each company's relative graham value is calculated by dividing the stocks intrinsic value by its current market price. So if the RGV is less than 1, this indicates that it's not favorable to buy that stock and if RGV is more than 1, then it would be bought.

Time period for measuring the effectiveness of the formula went from 2005 to 2017. EPS of the BSE100 stocks was used and growth rate of the stocks was considered for 5 years. The average yield on the AAA bonds in India is 8.5 for the past 10 years and the current yield the AAA bonds is 7.5.

Using the formula value stocks in last decade were

Table 4.1: Number of companies with a BUY call using Graham's Formula out of BSE100 stocks over a decade.

Year	*No. of companies (BUY)*
2006	44
2007	60
2008	6
2009	78
2010	54
2011	29
2012	46
2013	59
2014	54
2015	28
2016	54
2017	56

Top 5 performers for the last decade with average return above 50%.

Table 2. Percentage return of top 5 companies with a BUY call using Graham's Formula out of BSE100 stocks over a decade.

Top 5 Performers	*Average return above 50%*
Aurobindo Pharma	102.78%
United Breweries	91.53%
Jindal Steel	89.75%
Bajaj Fin	81.73%
JSW Steel	71.08%

Bottom 5 performers for the last decade with average return below 15%.

Table 3. Percentage return of bottom 5 companies with a BUY call using Graham's Formula out of BSE100 stocks over a decade.

Bottom 5 Performers	*Average return below 10%*
IDBI Bank	-15.14%
NTPC	3.55%
IOCL	7.73%
BOI	8.38%
ONGC	10.12%

4. Conclusion

It is observed that if an investor uses Benjamin Graham's Investment Approach then an average return of 39.43% can be obtained. The distribution of number of stocks in Buy category varies from 2 in 2017 to 88 in 2005 which also signifies how secular this approach of value investing. The reason being each of these models are unique and can be applied only on select few sectors. We conclude it is difficult to rank stocks in order of priority however we have identified top 5 stocks which give a return of more than 50% return and bottom 5 stocks which gives return less than 10%. This is a better approach for value investing as compared to top down or bottom up approach or other traditional approaches like Piotroski's F Score and others.

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Annexure I

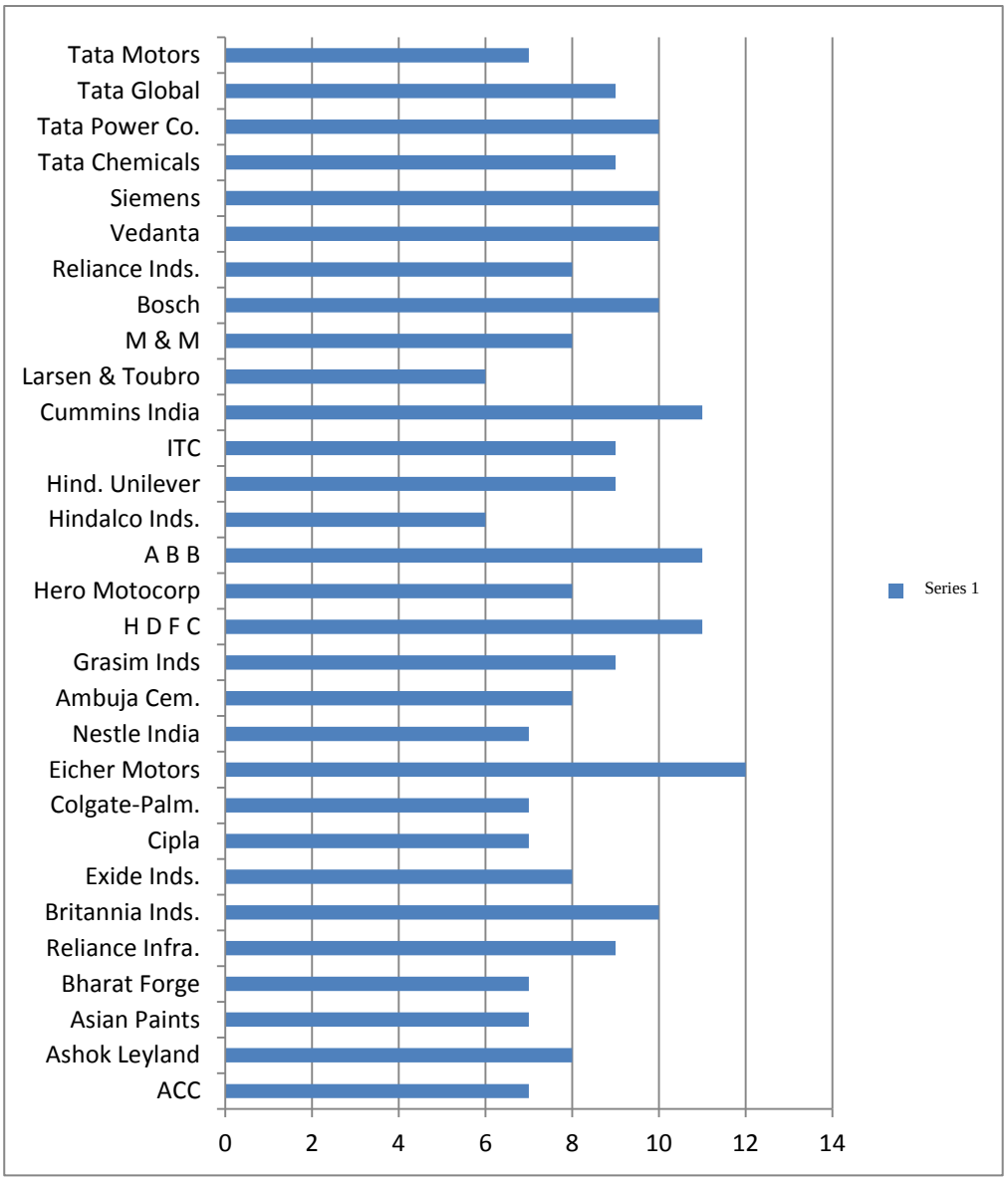

Figure 1. Buy signal given by using Benjamin Graham Approach for 30 stocks in BSE-100 list over a period of 13 years.

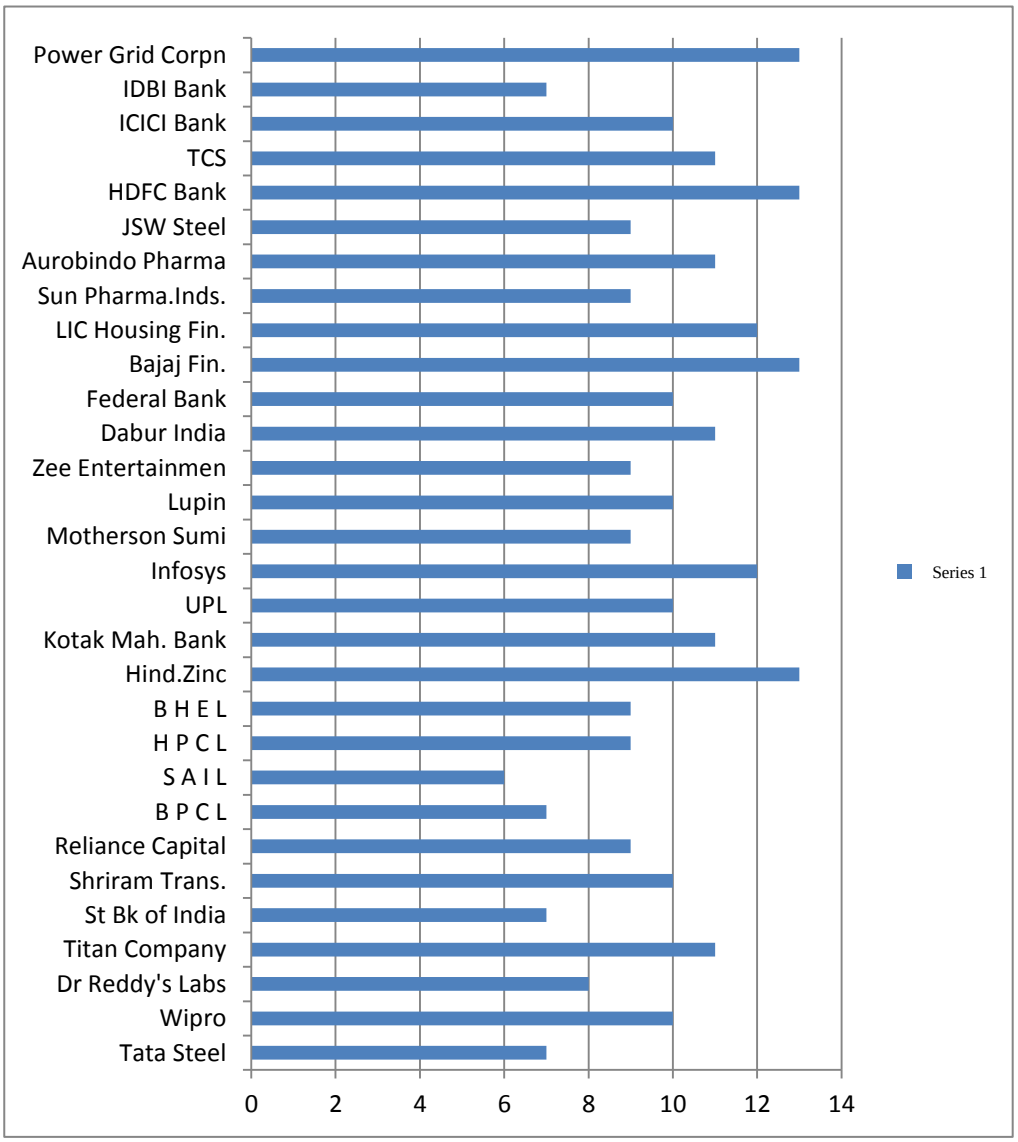

Figure 2. Buy signal given by using Benjamin Graham Approach for 30 stocks in BSE-100 list over a period of 13 years.

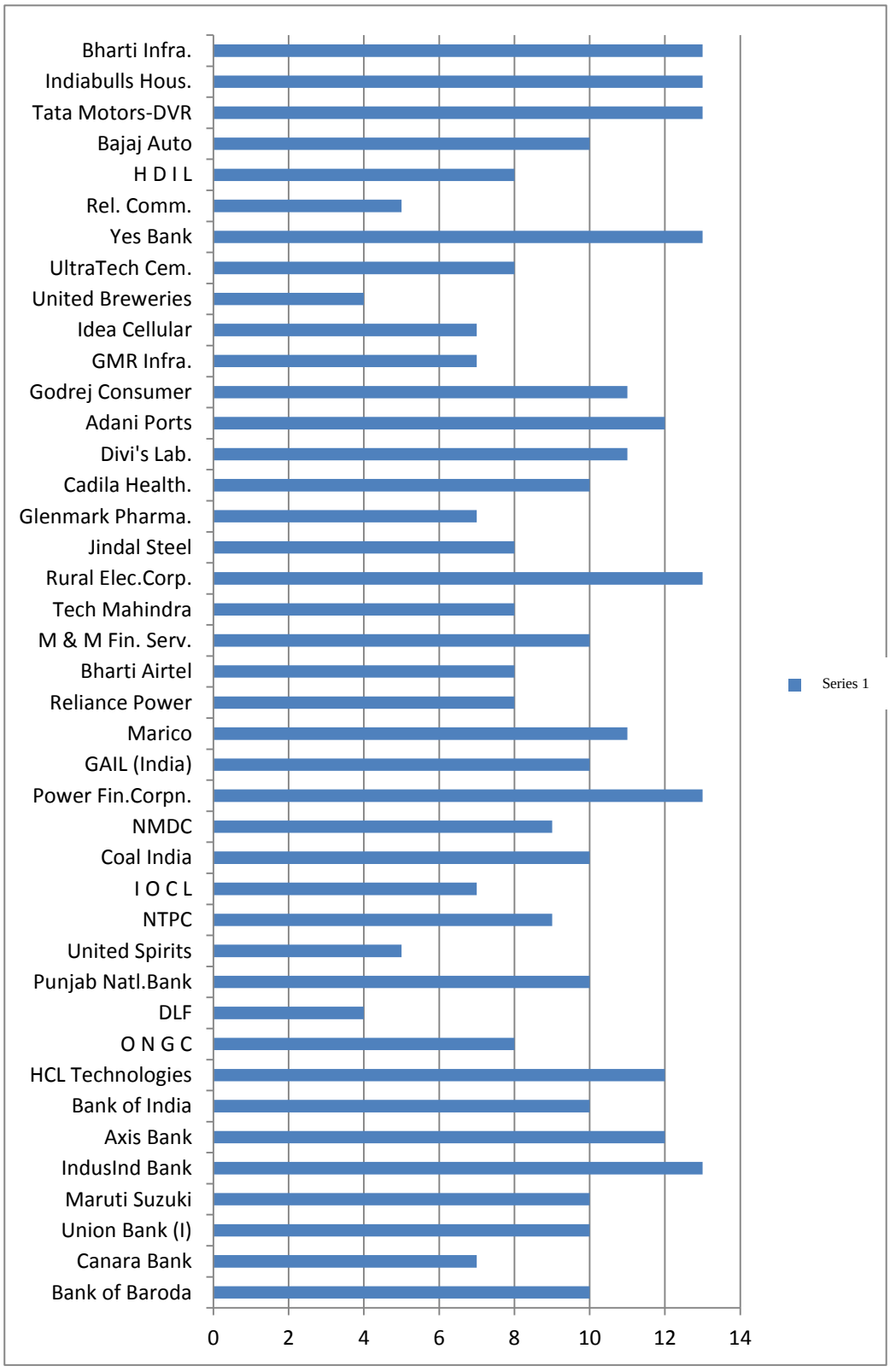

Figure 3. Buy signal given by using Benjamin Graham Approach for 40 stocks in BSE-100 list over a period of 13 years.