

“NIFTY-50 SHARIAH SCRIPS – A BETA ANALYSIS”

Dr. Bansi R. Shah

M.Com., M.Ed., M.B.A., NET(Commerce), NET(Education), NET(Management), Ph.D.
JJCET Commerce College - Junagadh (Gujarat)

Abstract

Systematic and Unsystematic risks are two major parts of the risk involved in portfolio. With the advent of portfolio diversification, the unsystematic risk therein can be reduced. Risk conscious investors need to quantify/measure the systematic risk before undertake it. To measure it Beta widely used instrument. In the present study the researcher had studied the effectiveness of beta in risk controlling. The 19 scrips included in NIFTY-50 Shariah Index had been taken as sample of the study. The analysis of beta, actual returns and beta adjusted returns had been made. To test the hypothesis of the study paired t-test had been used. The researcher had also used the charts to present and analyze data graphically. This study emerges logic of having beta values per security to balance the risk effectively. The present study will be very useful to the all investors to manage their portfolio risk specially who wish to invest according to the laws of Islamic Finance (Shariah).

Keywords: Unsystematic Risk, Systematic Risk, Beta, Beta adjusted returns, Shariah

INTRODUCTION

"Risk Comes From Not Knowing What You Are Doing."

- Warren Buffet

The whole world is full of Uncertainty and Risk. And Human beings always struggling to avoid it or mitigate it. Risks and be treated either of these four ways: (i) Risk Avoidance, (ii) Risk Transfer, (iii) Risk Acceptance and (iv) Risk Reduction. Risk is known as the deviation of the actual results from the expected in the work of finance. People are interested to eliminate the risk but the complete elimination of risk is not possible. With the help of knowledge and proper planning Risk can be mitigated or balanced up to an extent certainly.

The total risk of portfolio is divided in to two parts: (i) systematic risk (Uncontrollable) and (ii) unsystematic risk (Controllable). So before reducing the portfolio risk, it is necessary to quantify it. Unsystematic risk can be measured by various tools i.e. William Sharpe in index model. The unsystematic risk can be controlled/mitigated with the help of diversifying portfolio. So, investors must concentrate on systematic risk. Beta is widely accepted mean for measuring systematic risk.

Significance of Beta in Risk Balancing/ Controlling Process

There are several systematic factors like technological, political, monetary, legal, economical, etc. have potential to impact on returns adversely which is known as systematic risk. It is a matter of prudence to pay attention toward systematic risk of portfolio due to its vulnerability. Standard deviation, coefficient of variation, coefficient of determination and beta are the major tools use to quantify risks. The study of beta component helps portfolio managers to assess systematic risk and manage the portfolio accordingly.

Beta symbolizes the quantum of security response to the market forces. For example, NIFTY consists scrips of 50 companies. A security with 2.5 beta, will increase by 2.5% if the market increases by 1% and will correct by 2.5% if the market corrects by 1%. Investors have different appetites for risk. Considering beta, in above framework, investors can seek to construct a balanced portfolio by blending high beta securities with low betas securities. Through this, investors can trade off by handling risk effectively in their portfolio. The formula for Beta is as under:

Beta = Co-variance(SENSEX, Stock) / Variance(SENSEX)

REVIEW OF LITERATURE

Fant and Peterson Size and book-to-market equity are shown to transcend beta in understanding stock returns. One possible explanation of the book-to-market equity effect is overreaction. They investigated the effect of size, book-to-market equity, prior returns, and beta on stock returns. The study identified a strong positive relation between returns and prior returns.

According to **Shah(2012)** researched on the topic Is beta an effective risk controller? A study of BSE 30 Shares. She analyzed the effectiveness of beta in estimating the future returns. The actual returns and beta estimated returns were compared and analyzed whether there is any significant difference or not. To check variations were significant or not they were tested with paired t-test. She found that these variations were not significant and beta is an effective measure to control the risk.

Singh(2009) researched on topic The Dynamics of BSX & FUTODX Nifty: Volatility, Liquidity and Regulatory Frame Work. He analyzed the influence of growth opportunities on the post offering earnings performance of BSX and FUTODX firms that made seasoned equity offerings. The study reflected deterioration in the performance of growth firms following a seasoned equity offering.

Wu (2001) examines the stock price behavior of firms offering seasoned equity around their issue date. An analysis of a sample of 5180 seasoned offerings of firms listed on American Stock Exchange (AMEX), the NASDAQ, and the New York Stock Exchange (NYSE) during the period 1986-1998 finds that the SEOs are underpriced.

RESEARCH METHODOLOGY

Objectives of the study

The objectives of the present research are:

1. To analyze the impact of beta value on NIFTY-50 Shariah Index security returns in market.
2. To discover the need of betas for market.
3. To analyze the significance of difference between actual returns and beta adjusted returns of NIFTY-50 Shariah Index Companies.

Scope and Sample

The researcher concentrated on the recent scenario of the stock market. National Stock Exchange (NSE) is one of the most prominent stock exchanges in India. The index of NSE-50 shares is known as NIFTY. In the present study the researcher had studied the betas, actual returns and beta adjusted returns of 19 companies consisted by NIFTY-50 Shariah Index which has parent index NSE-50 for the time period February 2021 to January 2022. And 19 companies consisted by NIFTY-50 Shariah Index are the sample for the study.

Research Type

The present research aims to study the effectiveness of betas in risk balancing. So, it can be called an **exploratory research**. It is based on past data so it is also a **Historical Research**. In present research the data analyzed through statistical techniques on this base it can be known as **Analytical** one too.

Data Collection and Analysis

Since the all sample scrips are taken from NSE and price movements of these scrips are also compared with movements of NIFTY-50 Shariah Index, the data is exclusively collected from the web-site of NSE i.e. www.nseindia.com.

For analysis the following methodology is used:

1. Actual returns for all 19 sample scrips are taken from the website of NSE for the period of study.
2. Return of securities as per beta (NIFTY returns for the period multiplied by beta value of security) is calculated for period of the study.
3. Deviations in above (returns as per actual minus beta returns) are observed and taken as $X1 - X2$.

For the purpose of evidencing significance of deviations paired t-test is used to authenticate research further as it is used to compare two related samples.

DATA ANALYSIS AND INTERPRETATION

Conceptual Analysis

Islamic finance has been evolved about 1,400 years back. But the noticeable growth can be seen from 1970s when Islamic banks in gulf countries. Current it is estimated assets worth around US \$1 trillion worldwide under the rules of Islamic finance.

Shariah literally means 'the path leading to watering place'. **Shariah** means 'the law' as per Islam religion. Islamic finance is based on the application of Islamic law or Shariah which has roots in the Quran. Shariah, and very much in the context of Islamic finance, emphasizes justice and partnership.

Inclusion Criteria (Business Parameters) of Shariah Companies/Index

Companies can be known as Shariah Companies if they are involved in the activities as per principles of Islamic finance like:

- Wealth must be generated from legitimate trade and asset-based investment. (The use of money for the purposes of making money is expressly forbidden.)
- Investment should also have a social and an ethical benefit to wider society beyond pure return.
- Risk should be shared.
- All harmful activities (**HARAM**) should be avoided.

Exclusion Criteria (Business Parameters) of Shariah Companies/Index

Hence all companies which are primarily into the following activities are screened out on the business parameter. Activities which are not permitted under Shariah are those which involve engaging in interest earning businesses or in those businesses which are mostly harmful to human society and disallowed by Shariah. Which are:

- Primary business must be **HALAL** (permissible according to Islamic law - Shariah), therefore companies engaged in gambling, alcohol, armaments, tobacco, pornography or pork are excluded.
- The company which has total Debt to Market Value of Equity (12 Month average) greater than or equal to 33 %, is not consider as a Shariah Compliant stocks.
- The company which has Accounts Receivables / Market value of Equity (12 Month average) greater than or equal to 49 %, is excluded from the Shariah indices.
- The company which has (Cash + Interest Bearing Securities) / Market value of Equity (12 Month average) greater than or equal to 33%, is not eligible to involve in Shariah Index.
- Conventional financial services such as banks, insurance companies, finance and investment companies, stock broking etc.
- Companies involved in production or distribution of vulgar entertainment, such as film and other recreational activities where vulgarity, promiscuity is a part and parcel of the business undertaken / promoted
- Hotels and restaurants (providing non-Halal products or entertainment)
- Gambling, Narcotic drugs, etc.

Shariah investment has been growing gradually in India for the last two decades. Nisar (2007) in his article suggested that a number of Shariah-compliant stocks in India are much higher than in Muslim countries put together, thus providing larger scope for ethical investors. He stated that 61 per cent Indian companies are Shariah-compliant against 57 per cent in Malaysia, 51 per cent in Pakistan and a mere 6 per cent in Bahrain. He also said that 335 out of 1000 listed firms at National Stock Exchange of India and 237 out of 500 listed at Bombay Stock Exchange are Shariah-compliant. The Shariah compliant stocks are tradable stocks which adhered the Shariah Investment principles.

Indian Scenario of Shariah Companies/Indices

In India Shariah Index is available in two of the most prominent Stock Exchanges i.e. Bombay Stock Exchange and National Stock Exchange which reflects the popularity among the investors to invest in Shariah scrips.

In Bombay Stock Exchange the **S&P BSE 500 Shariah Index** is launched as a stock market index on 27 December 2010. **S&P BSE 50 Shariah Index** is also available.

In National Stock Exchange NIFTY500 Shariah which has parent index as NIFTY500, NIFTY 500 Shariah which has parent index as NIFTY50 and NIFTY 25 indices are available at present. These are the Islamic Indices constituting the companies which pass the business parameters/ laws of Shariah. NSE Indices Limited calculates three Shariah indices NIFTY50 Shariah, NIFTY500 Shariah & NIFTY Shariah 25. The NIFTY Shariah indices are designed to offer investors Shariah-compliant investment solutions

The present Study is based on the NIFTY-50 Shariah Index constituting companies which has parent index NIFTY-50. This index does not have fixed number of companies. Constituents of parent index which are Shariah compliant are part of NIFTY50 Shariah Index. NIFTY50 Shariah Index can be used for a variety of purposes such as benchmarking fund portfolios, launching of index funds, ETFs and structured products.

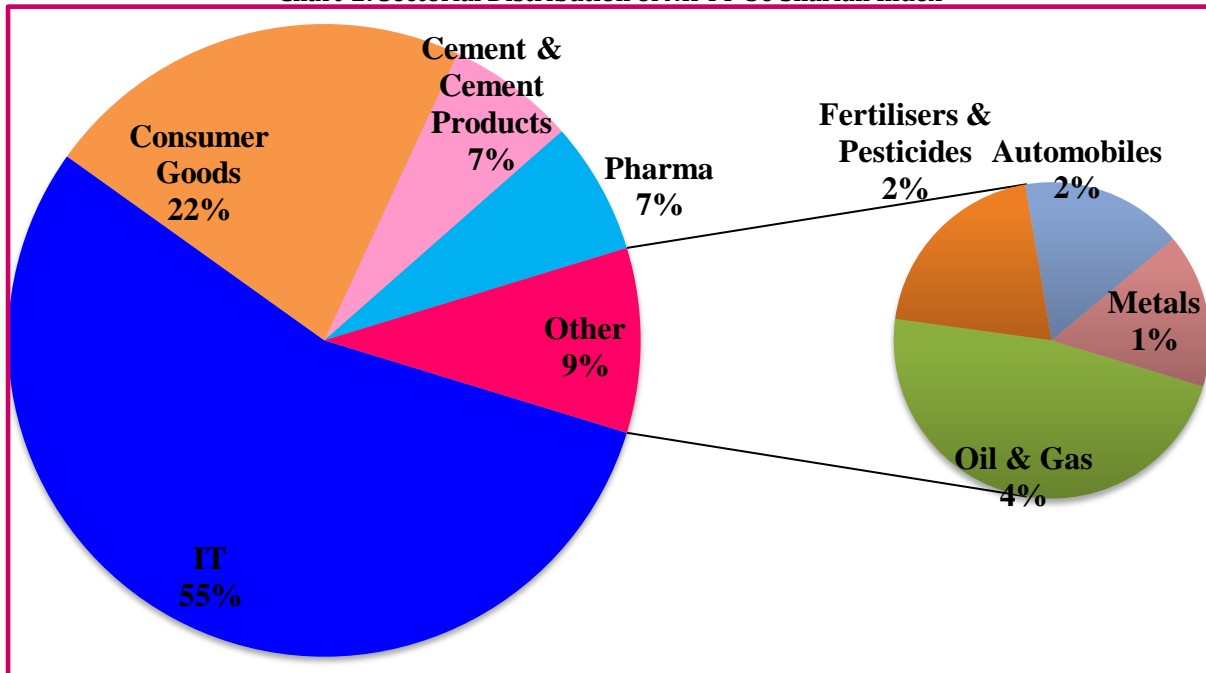
Graphical Presentation and Analysis of NIFTY-50 Shariah Components Chart-1: NIFTY50 Shariah Total Returns Index



<https://www.gapbodhitaru.org/>

*Source: <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>
Chart-1 reflects the movements of NIFTY50 Shariah from the year 2007 to 2022. It can be observed that in the year 2009 there was a remarkable decline. In the rest of the year up to year 2010 this index shows very slow growth. After the year 2010 this index registered the remarkable growth till the date. The chart reflects overall upward trend of the index and in last two decades it has higher growth. Which seems that in the last two decades investors became more interested in the companies which pass the inclusion criteria of Shariah (Islamic finance).

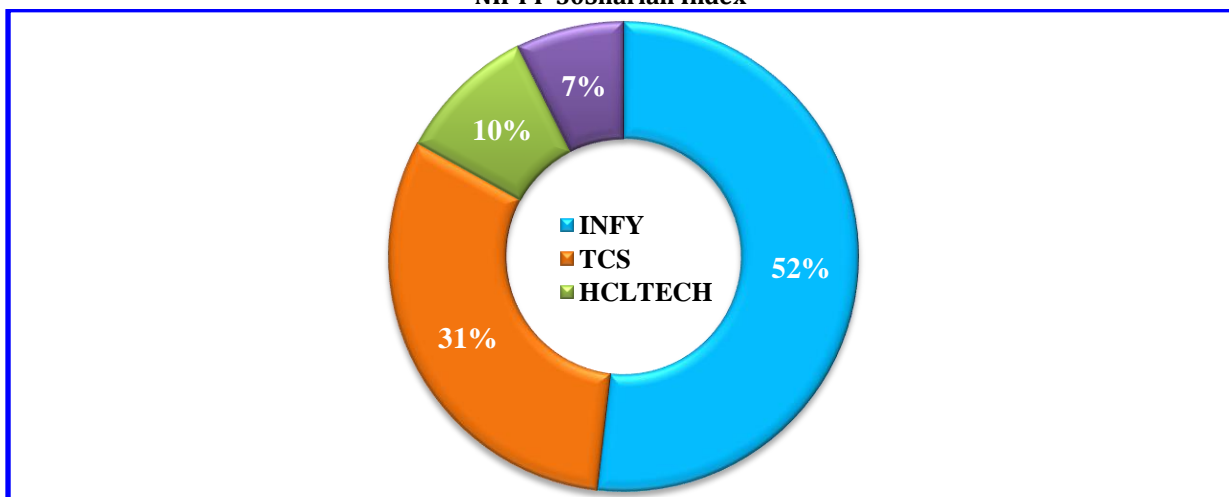
Chart-2: Sectorial Distribution of NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-2 represents the total composition of different sectors of NSE included in NIFTY50 Shariah. These sectors are in the inclusion criteria/business parameters according to Shariah (the laws of Islam). In NIFTY50 Shariah IT sector holds the highest 55% share, Consumer Goods sector is at 22%. The Cement, Pharmaceutical sector has 7% share each while in rest 9% share held by Fertilizer & Pesticides, Automobile, Oil & Gas and Metal sectors.

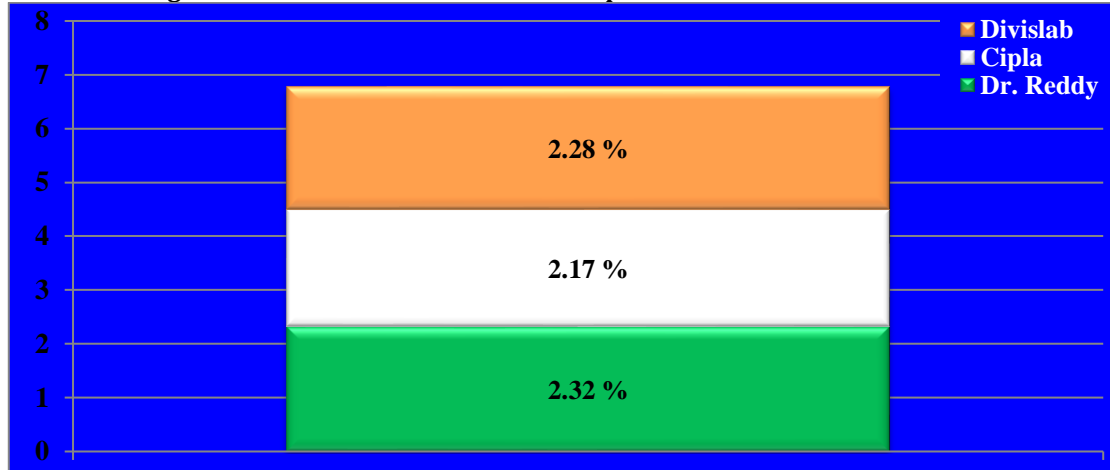
Chart-3: Distribution of IT Sector Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-3 shows the percentage share of four companies of IT sector included in NIFTY50 Shariah. In the total share of IT sector INFY holds highest share at 52% while TCS, HCL and TECHM possess 31%, 10% and 7% share respectively.

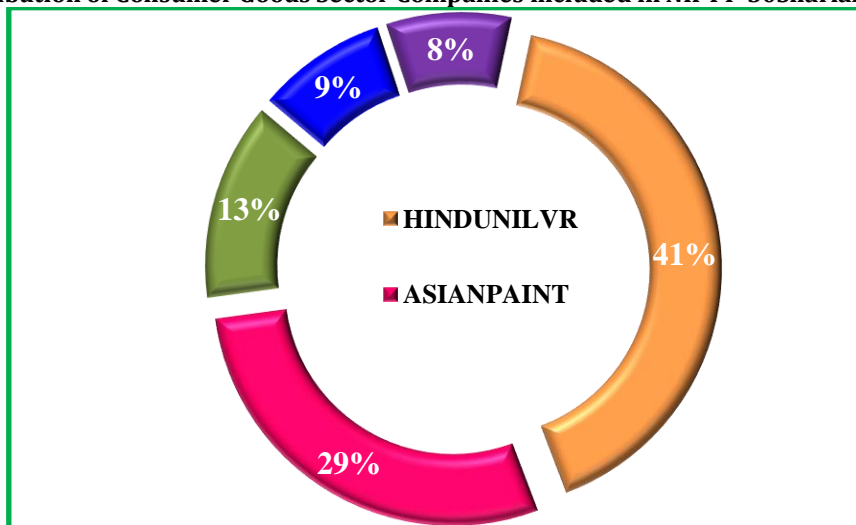
Chart-4: Percentage Distribution of Pharma Sector Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-4 reflects the share of pharmaceutical companies in the NIFTY50 Shariah. These companies Divislab, Cipla and Dr. Reddy are part of Pharmaceutical Sector under NIFTY50 Shariah. The individual share of these companies is almost same.

Chart-5: Distribution of Consumer Goods Sector Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-5 presents the share of five Consumer goods companies in the Consumer goods sector under NIFTY50 Shariah. Hindustan Unilever holds highest share at 41% and Asian paints is at the second position with 29%. Nestle India, Tata consumer and Britannia hold 13%, 9% and 8% share respectively.

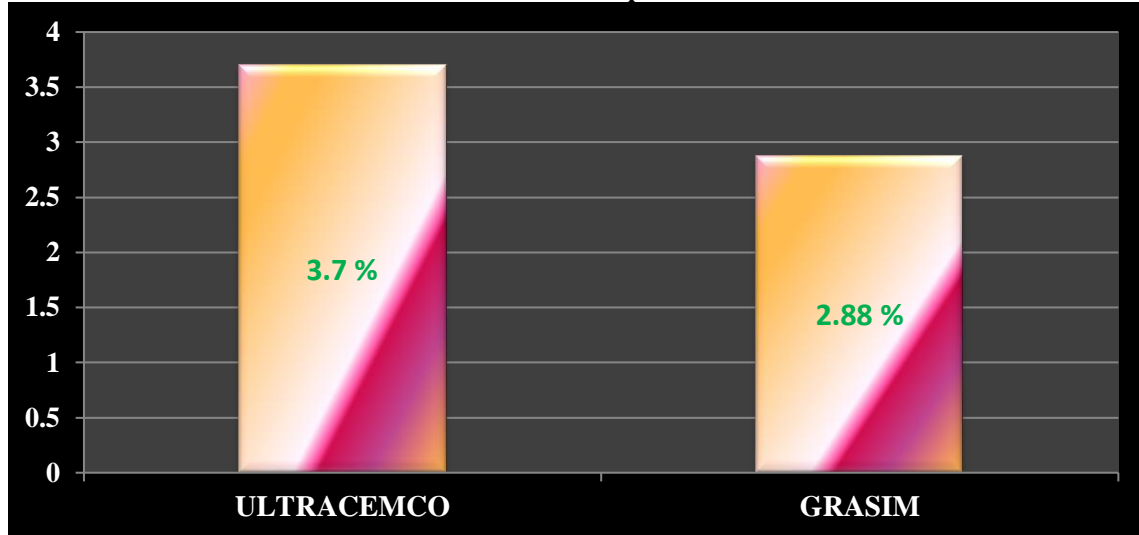
Chart-6: Distribution of Fertilizer and Pesticides Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-6 shows that in Fertilizer & Pesticides Sector under NIFTY50 Shariah there is only one company UPL. UPL holds 1.9% share of NIFTY50 Shariah.

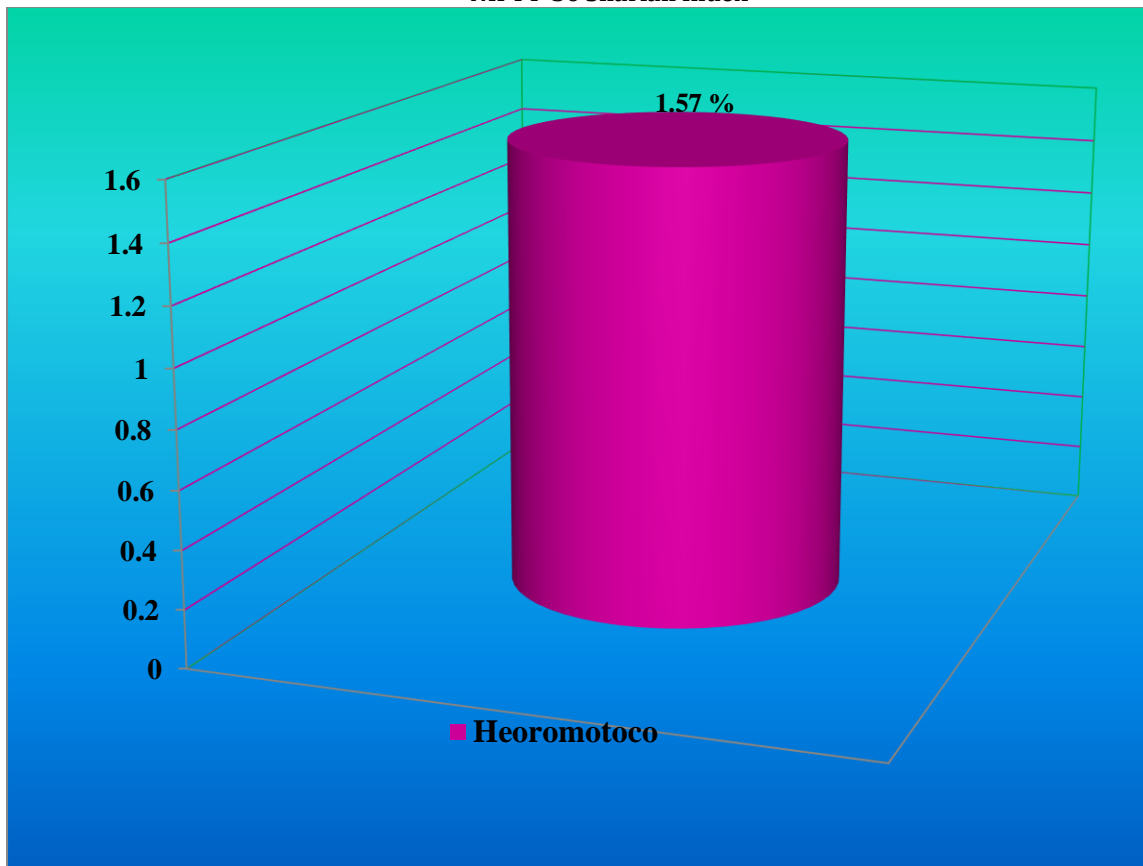
Chart-7: Distribution of Cement & Cement Products Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-7 represents the Cement and Cement products sector companies under NIFTY50 Shariah. Out of total share of Cement and Cement product sector of 6.58%, ULTRACEMCO holds 3.7% and 2.88% is held by GRASIM.

Chart-8: Distribution of Automobile Sector Companies included in NIFTY-50 Shariah Index

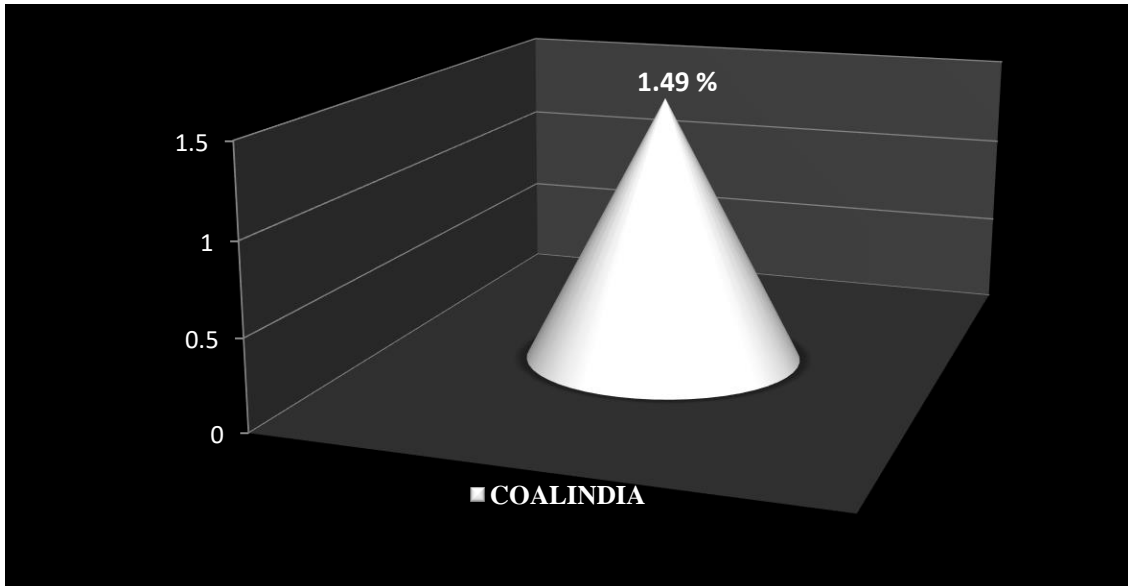


**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-8 reflects that there is only one company Heromotoco at 1.57% of total Share under NIFTY50 Shariah.

Chart-9: Distribution of Metals Companies included in NIFTY-50 Shariah Index

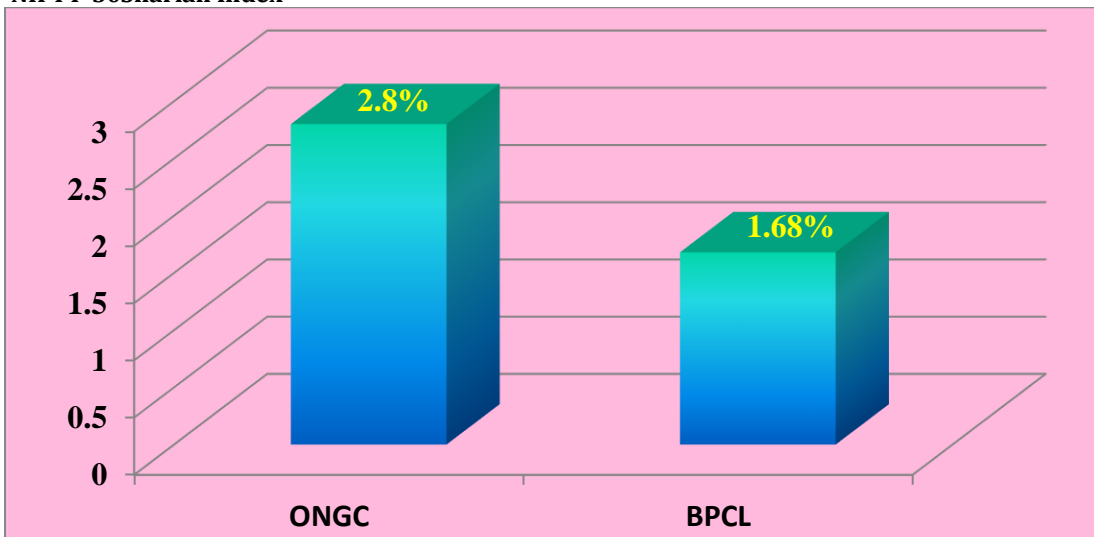
<https://www.gapbodhitaru.org/>



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-9 depicts there is only one company under the Metal sector under NIFTY50 Shariah at 1.49 % of the total share. Here the whole Metal sector share 1.49% is held by this one company only.

Chart-10: Distribution of Oil & Gas Sector Companies included in NIFTY-50 Shariah Index



**Prepared from the data from <https://www.niftyindices.com/indices/equity/thematic-indices/nifty-50-shariah>

Chart-10 shows the Oil and Gas sector under NIFTY50 Shariah. The total share of this sector is 4.48 out of which 2.8% and 1.68% is distributed between ONGC and BPCL respectively.

Table - 1
Beta, Actual Returns, Returns as per betas and deviations in returns of NIFTY-50 Shariah Scrips for One Year Period(Feb 2021 to Jan 2022)

Sr. No	Scrip code	Company	Beta Values	Actual Returns (1 year) (%)	Returns as per beta (beta adjusted returns)	Deviations in returns (actual-beta)
1	ASIANPAINT	Asian Paints Ltd.	0.57	12	9.462	2.538
2	BPCL	Bharat Petroleum Corporation Ltd.	0.81	21	13.446	7.554
3	BRITANNIA	Britannia Industries Ltd.	0.3	7	4.98	2.02
4	CIPLA	Cipla Ltd.	0.06	0	0.996	-0.996

5	COALINDIA	Coal India Ltd.	0.95	20	15.77	4.23
6	DIVISLAB	Divi's Laboratories Ltd.	0.58	13	9.628	3.372
7	DRREDDY	Dr. Reddy's Laboratories Ltd.	0.26	3	4.316	-1.316
8	GRASIM	Grasim Industries Ltd.	1.08	37	17.928	19.072
9	HCLTECH	HCL Technologies Ltd.	0.78	23	12.948	10.052
10	HEROMOTOCO	Hero MotoCorp Ltd.	0.8	31	13.28	17.72
11	HINDUNILVR	Hindustan Unilever Ltd.	0.37	8	6.142	1.858
12	INFY	Infosys Ltd.	0.68	27	11.288	15.712
13	NESTLEIND	Nestle India Ltd.	0.37	10	6.142	3.858
14	ONGC	Oil & Natural Gas Corporation Ltd.	1.01	20	16.766	3.234
15	TCS	Tata Consultancy Services Ltd.	0.62	22	10.292	11.708
16	TATACONSUM	Tata Consumer Products Ltd.	0.76	24	12.616	11.384
17	TECHM	Tech Mahindra Ltd.	0.88	22	14.608	7.392
18	UPL	UPL Ltd.	0.89	17	14.774	2.226
19	ULTRACEMCO	UltraTech Cement Ltd.	0.98	35	16.268	18.732
		NIFTY 50	1	16.6		

**Prepared from the data from excelsheet from www.nseindia.com

Table-1 represents the details of returns of the 19 companies included in NIFTY-50 Shariah Index for one year from February 2021 to January 2022. The researcher calculated beta adjusted returns from the formula: Beta value of individual securities * Market return. Here market return is the return of NIFTY50.

The deviations of actual returns from beta returns are also calculated. GRASIM, INFY and ULTRACEMCO registered the higher deviations than other scrips. While CIPLA, BRITANIA, ASIANPAINTS, DRREDDY and UPL registered comparatively low deviations in actual returns from beta adjusted returns.

Graphical Presentation and Analysis
Chart-11: Beta values of NIFTY-50 Shariah Index Constituents

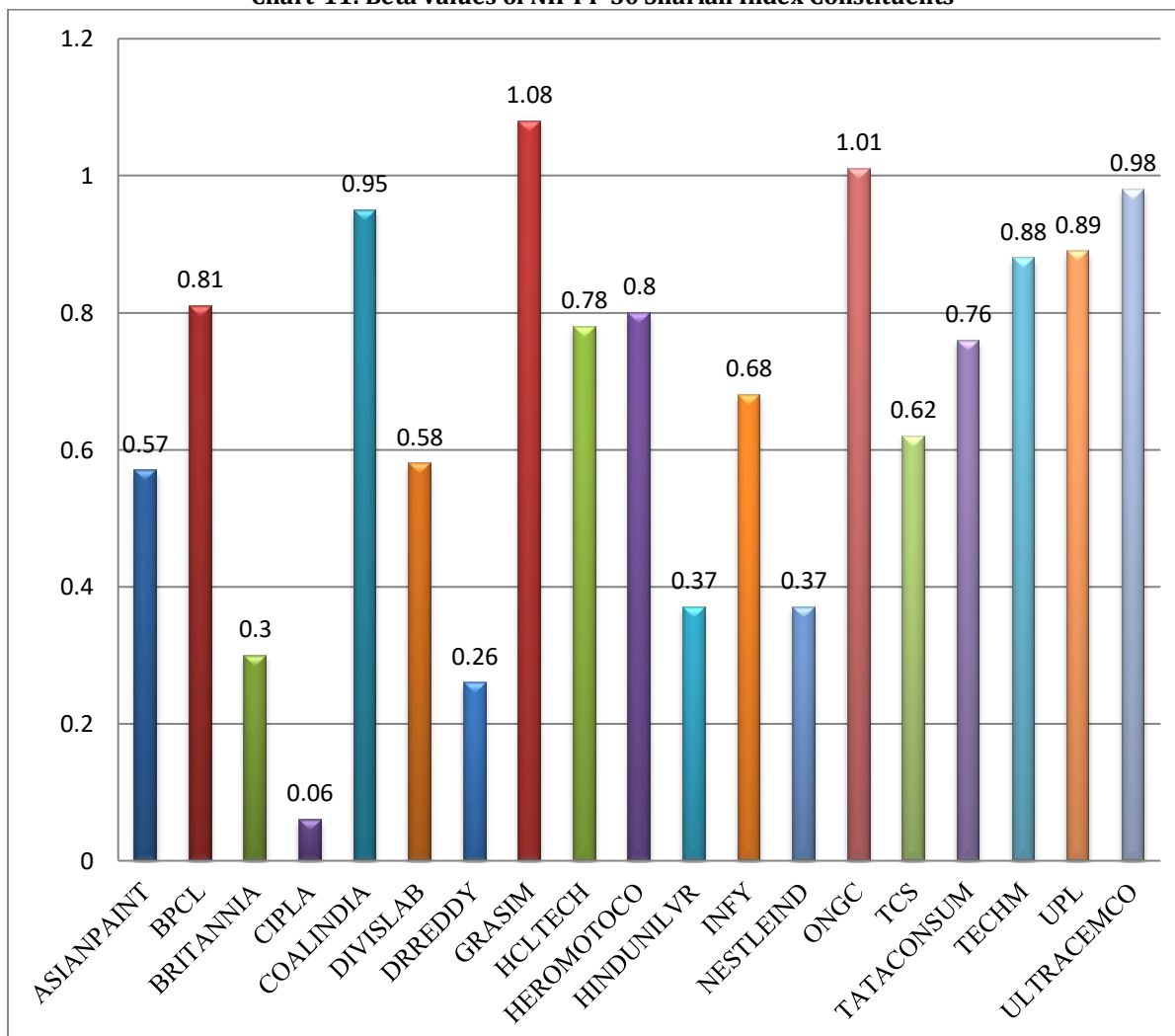


Chart-11 presents the beta values of 19 companies included in NIFTY50 Shariah. The higher beta values of the companies suggest that these companies share prices are more sensitive to the market changes while low beta value companies are comparatively less sensitive towards the fluctuation of market. From this chart the investors can identify which are the aggressive stocks and which are passive/defensive stocks. This will help the investors to balance the portfolio risk and returns. This chart reflects that GRASIM seems the most aggressive stock and CIPLA the passive one towards the market movements.

Chart-12: Beta Adjusted Returns and Actual Returns of NIFTY-50 Shariah Index constituents

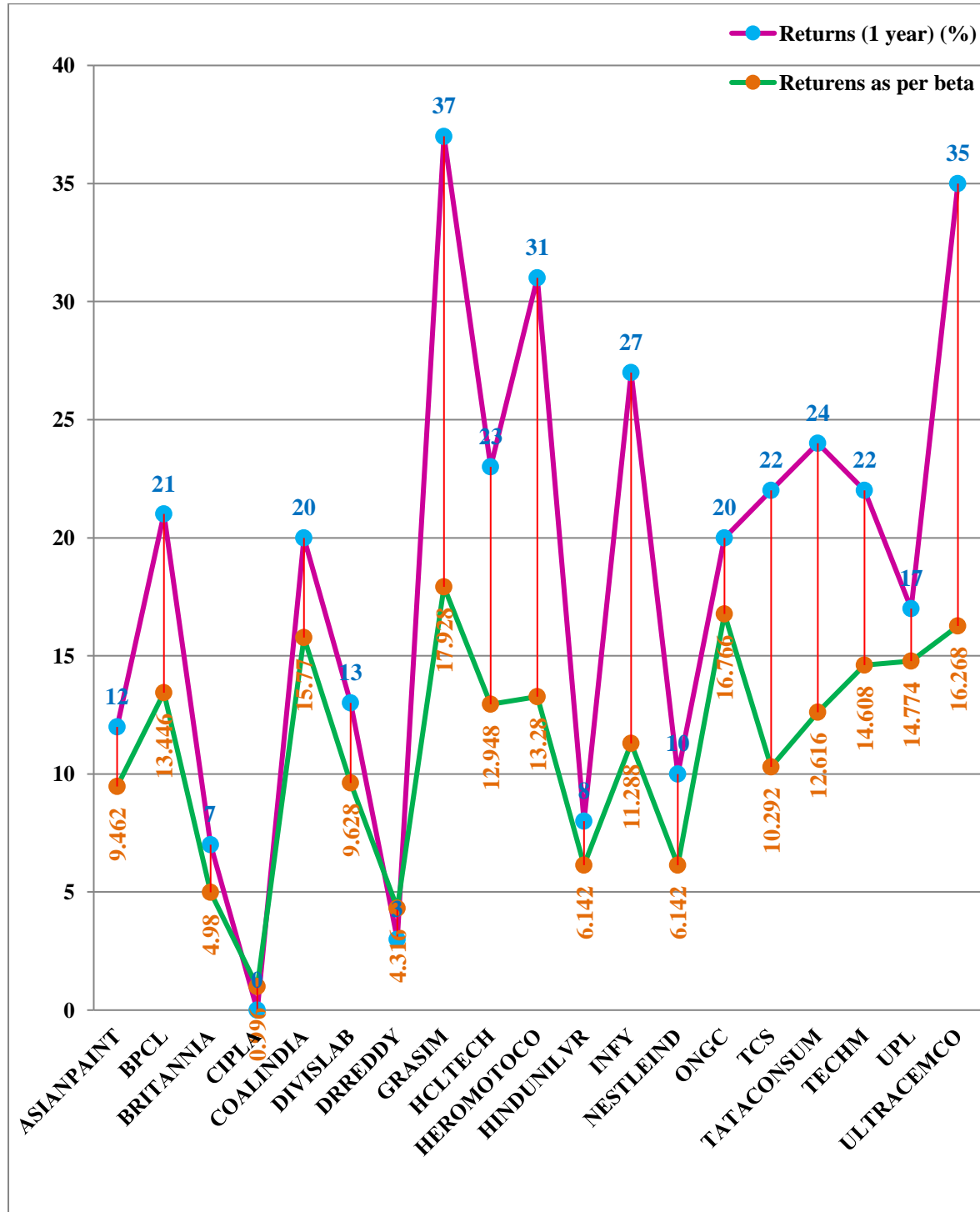


Chart-12 depicts the actual returns and beta adjusted returns February 2021 to January 2022 of 19 companies included in NIFTY50 Shariah Index. GRASIM and ULTRACEMCO registered remarkable higher actual returns while CIPLA and DRREDDY gave the lowest returns. The same scenario can be seen in the beta adjusted returns in most of the sample companies. However, TCS and UPI are two exceptional companies in this case.

<https://www.gapbodhitaru.org/>

Chart-13: Deviations in returns of NIFTY50 Shariah Index Constituents

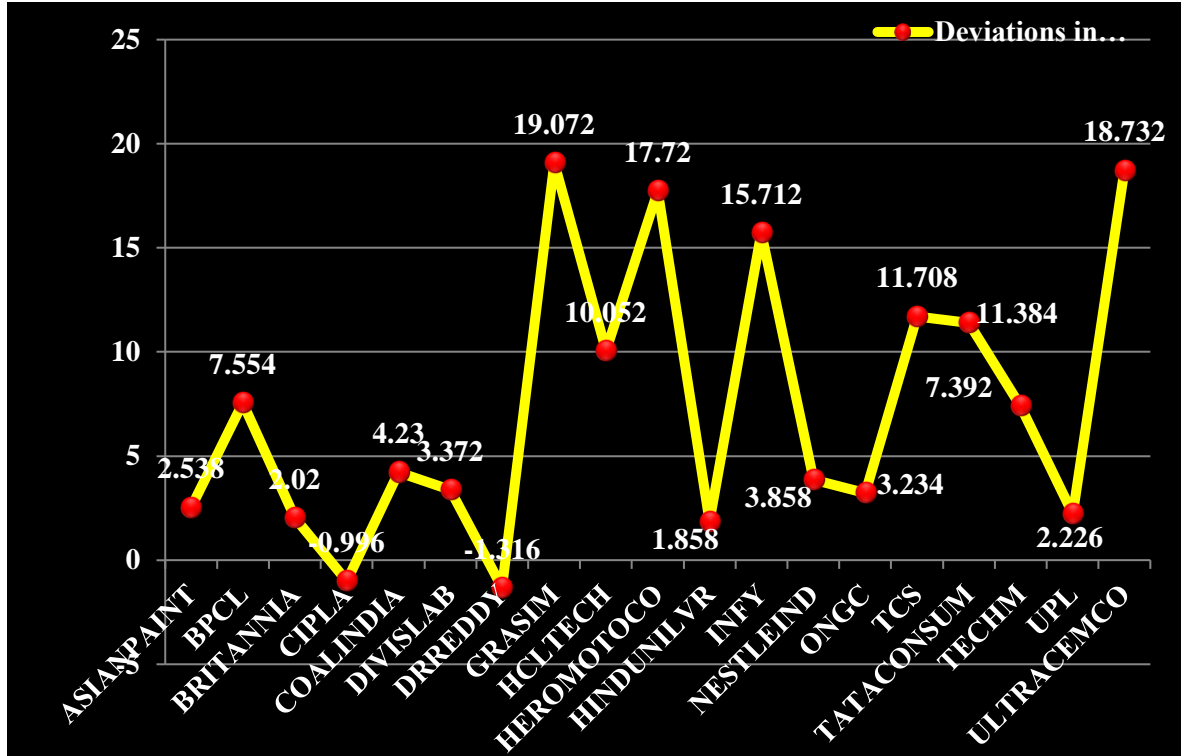


Chart-13 shows the deviations of actual returns from beta adjusted returns of 19 companies included in NIFTY50 Shariah Index. It can be seen in the chart that GRASIM, HEROMOTOCO, INFOSYS and ULTRACEMCO registered the highest deviations because the actual returns of these companies are much higher than the beta adjusted returns. The rest of the sample companies have either moderate or low deviations which suggests that beta adjusted returns are nearer to the actual returns of these companies.

Hypothesis Testing

Paired – t-test

Ho: Deviations in security returns (i.e. difference between actual returns and beta adjusted returns) are not significant. [**Beta is effective to forecast the actual returns.**]

Ha: Deviations in security returns (i.e. difference between actual returns and beta adjusted returns) are significant. [**Beta is not effective to forecast the actual returns.**]

Calculated $t_{cal} = 0.006410564$

Table value @ 5% level of significance (t_{tv}) = 2.045

$t_{cal} < t_{tv}$

Result: Accept Null Hypothesis

FINDING

Deviations in security returns (i.e. difference between actual returns and beta adjusted returns) are not significant. [**Beta is effective to forecast the actual returns.**]

LIMITATIONS OF THE STUDY

1. The present study represents of one year time period from February 2021 to January 2022.
2. The present study is based on secondary data. So, the reliability of the results of present study depends on the reliability of secondary data.
3. The similar results cannot be surely applicable to other group of scrips, Indices and time period.

SCOPE FOR FUTURE RESEARCH

1. The present study is based on to evaluate the effectiveness of beta to measure systematic risk involved in securities. The other tool of measurement of risk like standard deviation can be studied.
2. In the present study the sample companies are selected from NIFTY50 Shariah. The other Index constituents of BSE and NSE can also be studied.

3. The present study is done on an Indian stock market Index. Any foreign country stock market index can also be studied.

CONCLUSION

The appetite to undertake the risk is different from one investor to another. Risk management is the prominent task in handling portfolio. Investors want higher the returns at lower risk. But it is not possible all the time. So, it is important to measure the risk before undertake it. This creates the huge demand for a tool which helps to measure the risk and to estimate the future return for balancing the risk. Beta is one of the most widely used tools for quantifying systematic risk. This study proves that beta will enable investors and portfolio managers to assess security risk in better manner because,

“Risk Varies Inversely with Knowledge.”

– Irving Fisher

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