Impact of Behavioral factors on hypothetical Stocks-An empirical study of HNI's Investment perspective with special reference to BSE

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#### Abstract

The study tries to investigate the behavioral finance and investor Psychology in investment decision making specifically correlated towards Hypothetical stocks which can trade above the Capital Market Line always. The Study tried to establish the critical factors which influence the behavior segment of the group of High Net worth Individuals on successful investment on the hypothetical stocks. The study has a sample size of 50 HNI's. The study established the critical behavioral factors such as Representativeness, Overconfidence, anchoring, Gamblers Fallacy, loss aversion, regret aversion, mental accounting, Group behavior, Psychology and other factors. The study also tries to investigate the helps the investors in removing the Cementing the Behavioral Gap investment especially towards the Hypothetical stocks. The study deliberates the ranking of critical factors which influences investment and also tries to have a close look up at the trading activity. The study is confined to investors of Bangalore Stock Exchange and conclusions so drawn can be implemented to the same segment of investors in different exchange as well.


## Introduction: -

Investment has become a primary concern of any individual in India. Most of investors are keen to invest on those stocks which give them an optimum return. Return is also correlated with the amount of Risk the individual takes (As indicated in CAPM). Identification of specific risk plays keen role in establishing the relationship between the stocks and their behavior. Hypothetical stocks will yield an optimum return hence advisable for long term investment. Finding out the Hypothetical stocks and their behavior has attracted the eyes of many investment brokers. The study would be conducted by keeping in mind of investment mechanism followed by aggressive investors, speculators, short sellers. The Research paper would also help these investors in selecting the best possible stocks which yields Bench mark return in the long run. The research will zero on selection hypothetical stocks to identification of risk to reduction of risk \& also will give a clear cut picture about the Return expected out of these stocks. The research would critically investigate the behavioral factors which will influence the behavior of both stocks as well as investors.

## Objectives of the study:-

1. To study the Critical Behavioral Factors which influences the Investment Decision
2. To correlate the impact of these factors on the investment Decision
3. To propagate best stocks ( Hypothetical ETF) for the investment in the Long run keeping in Mind different investors
4. To conduct a qualitative meta-analysis of the current state of financial decision making behavior on the above factors

## Hypothesis:-

1. Behavioral factors has a significant positive impact on the investment Decision
2. Risk Return Analysis is positively correlated with the behavioral Investment Decisions
3. Behavioral Mind set of investors will help in stimulating marginal return

Tools used for Data Collection:- Parameters on which calculated risk can be assessed

1. Effect of Discount Brokerage
2. Personal Capital Assessment
3. Portfolio Analysis
4. Running Through Feex (A software which calculates the risk and Return of the Estimated Portfolio Mix

## Data Analysis is done through

$\checkmark$ Meta Analysis is done to process the Qualitative data from the Behavior segmentation of the stocks based on Technical Analysis tools of selected hypothetical stocks
$\checkmark$ Matching of the above two is done to reduce the GAP between the Investor and their behaviouristic Syndrome
$\checkmark$ Assessment is made by Charting out the List of graded parameters in which hypothetical stocks can be selected

## Tools used for Analysis:-

$\checkmark$ Factor Analysis
$\checkmark$ Multivariate Analysis
$\checkmark$ Exponential Moving Average
$\checkmark$ A Formal Z-Two Tailed Test

Time Frame of Research: - Data Collected from April 2017 till February 2019 hence the duration of

## Review of Literature:-

1. Introduction to the special issue on behavioral finance published in journal of Empirical finance talks about the reason of new approach which has emerged. Behavioral finance thinks about financial issues with the help of ideas borrowed from psychology. It not only casts doubt on the predictions of modern finance, such as the notion of efficient markets, but also on its micro-foundations, i.e., expected utility maximization, rational expectations and Bayesian updating. Prospect theory, mental frames, heuristics and related psychological concepts form the basis for a new theory of finance. Opinions differ, but so far, it appears, behavioral finance has been a fertile paradigm. In the area of asset pricing, for instance, it has been used to interpret and/or to discover empirical anomalies in the speculative dynamics of stock returns, e.g., under- and overreaction to news.

## 2. The human agent in behavioral finance: a Searlean perspective published in journal

 of economic methodology states the implications of John Searle's theory of human ontology, intentional mental states such as beliefs and wants rely on non-intentional, Background, dispositions to produce rational behavior. The distinction between intentional and non-intentional states is used as the basis on which to understand the various conceptions of human agency to be found in behavioral finance. The agent of behavioral finance is characterized in terms of three sets of psychological traits: prospect theory, heuristics and mental accounting. These are examined from a Searlean perspective and shown to rely on the interplay between various reflected upon and non-reflected upon elements.3. The Psychology of Financial Decision-Making: Applications to Trading, Dealing, and Investment Analysis by Dr. Denis published in journal of Psychology and financial markets states that social psychology and behavioral finance could offer competitive advantage both to financial markets as well as individual firms. The aim is to identify potential applications of experimental and organizational psychology to improve the efficiency of financial institutions. The focus is on two major areas of application: trading and dealing in currencies, and investment decision-making.
4. Are behavioral finance equity funds a superior investment? A note on fund performance and market efficiency published by Christiane Goodfellow Dirk Schiereck Steffen Wippler in Journal of Asset Management compares the performance of behavioral finance funds with the performance of the market and that of matched mutual funds across the major regions of the world from 1990 to 2010. Performance is measured raw and risk-adjusted. The empirical evidence suggests that behavioral finance funds neither outperform nor underperform the market or matched actively managed mutual funds. Overall, the empirical findings vary strongly with the set-up of the investigation. We conclude that either stock markets are more efficient, or fund management is worse, than behavioral finance funds advertise.
5. Understanding Behavioral Finance by Dr. Swapan Kumar Roy published in The Management Accountant Journal talks about the critical irrational behavior aspects which include herd behavior, Over confidence, Anchoring, Loss Aversion, Over reaction, mental accounting. The article also talks about the behavioral Theories such as prospect theory, regret theory, over and under reaction theories.

## Data Analysis

Table 1 showing the fundamental information of Tata investment corporation

| DATE | open <br> value | close <br> value | $\mathrm{Ri}(\mathrm{Y})$ | $\mathrm{Rm}(\mathrm{x})$ | $\mathrm{Ri}^{* R m}$ | $\mathrm{Rm} * \mathrm{Rm}$ | $(y-\bar{y})^{2}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Apr-17 | 637 | 671.65 | 5.4395 | 0.6075 | 3.3045 | 0.3690 | 16.4578 |
| May-17 | 669 | 660.9 | -1.2107 | 3.7456 | -4.5350 | 14.0295 | 6.7262 |
| Jun-17 | 654.15 | 736.9 | 12.65 | -0.6282 | -7.9467 | 0.3946 | 126.9514 |
| Jul-17 | 744.95 | 889.35 | 19.38385 | 4.3615 | 84.5426 | 19.0226 | 324.0403 |
| Aug-17 | 892 | 848.1 | -4.92152 | -2.6068 | 12.8294 | 6.7954 | 39.7436 |
| Sep-17 | 846.1 | 850.25 | 0.490486 | -1.5285 | -0.7497 | 2.3363 | 0.7961 |
| Oct-17 | 859.5 | 866 | 0.756254 | 5.3128 | 4.0178 | 28.2258 | 0.3924 |
| Nov-17 | 857 | 896.3 | 4.585764 | -0.5847 | -2.6813 | 0.3418 | 10.2594 |
| Dec-17 | 890.75 | 889.5 | -0.14033 | 2.4337 | -0.3415 | 5.9228 | 2.3197 |
| Jan-18 | 895 | 848.2 | -5.22905 | 5.5931 | -29.2466 | 31.2827 | 43.7156 |
| Feb-18 | 865 | 798.65 | -7.67052 | -5.1733 | 39.6819 | 26.7630 | 81.9613 |
| Mar-18 | 802.55 | 739.75 | -7.82506 | -3.4343 | 26.8736 | 11.7944 | 84.7834 |
| Apr-18 | 733.85 | 865.2 | 17.89875 | 6.4469 | 115.3915 | 41.5625 | 272.7789 |
| May-18 | 871.05 | 808.2 | -7.21543 | -0.0184 | 0.1327 | 0.0003 | 73.9283 |
| Jun-18 | 805 | 816.4 | 1.416149 | 0.1399 | 0.1981 | 0.0195 | 0.0011 |
| Jul-18 | 818.95 | 807.2 | -1.43476 | 5.7992 | -8.3204 | 33.6307 | 7.9382 |
| Aug-18 | 807 | 809.15 | 0.266419 | 2.6596 | 0.7085 | 7.0734 | 1.2461 |
| Sep-18 | 807.85 | 726.65 | -10.0514 | -6.9091 | 69.4459 | 47.7356 | 130.7387 |
| Oct-18 | 726.85 | 679.65 | -6.49377 | -5.0509 | 32.7994 | 25.5115 | 62.0393 |
| Nov-18 | 673.2 | 849.15 | 26.13636 | 4.4549 | 116.4349 | 19.8461 | 612.7423 |
| Dec-18 | 855 | 890.95 | 4.204678 | -0.9021 | -3.7930 | 0.8137 | 7.9633 |
| Jan-19 | 899.95 | 852.7 | -5.25029 | 0.2624 | -1.37768 | 0.0688 | 43.9970 |
| Feb-19 | 860 | 825.75 | -3.98256 | -0.9309 | 3.7073 | 0.8665 | 28.7863 |
| TOTAL |  |  | 31.80285 | 14.0499 | 451.0764 | 324.4077 | 1980.308 |
|  |  |  | 1.382732 | 0.610865 |  |  |  |

$\operatorname{Beta}(\boldsymbol{\beta})=\frac{\mathrm{n} \sum \mathrm{xy}-\sum \mathrm{x} \sum \mathrm{y}}{\mathrm{n} \sum \mathrm{x}^{2}-\left(\sum \mathrm{x}\right)^{2}}$

$=1.3667$

Variance $\left(\sigma^{2}\right)=\frac{\sum(y-y)^{2}}{23}$
$=\frac{1980.308}{23}$
$=86.1003$

Std Deviation $(\sigma)=\sqrt{86.1003}$
$=9.2790$

$$
\begin{aligned}
& \text { Alpha }(\alpha)=y-\beta x \\
& =(1.3827)-(1.3667 * 0.6108)
\end{aligned}
$$

Table 2. Showing the fundamental information of NIIT TECH

| DATE | Open value | close value | $\mathrm{Ri}(\mathrm{y})$ | $\mathrm{Rm}(\mathrm{x})$ | $\mathrm{Ri} * \mathrm{Rm}$ | $\mathrm{Rm} * \mathrm{Rm}$ | $(y-\bar{y})^{2}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Apr-17 | 430 | 456.95 | 6.2674 | 0.6075 | 3.8074 | 0.3690 | 0.4392 |
| May-17 | 455 | 521.2 | 14.5494 | 3.7456 | 54.4964 | 14.0295 | 80.0093 |
| Jun-17 | 520 | 577.1 | 10.9807 | -0.6282 | -6.8981 | 0.3946 | 28.9025 |
| Jul-17 | 578 | 514.15 | -11.0467 | 4.3615 | -48.1802 | 19.0226 | 277.2681 |
| Aug-17 | 519.35 | 497.9 | -4.1301 | -2.6068 | 10.7665 | 6.7954 | 94.7667 |
| Sep-17 | 501 | 541.7 | 8.1237 | -1.5285 | -12.4172 | 2.3363 | 6.3458 |
| Oct-17 | 544 | 677.85 | 24.6047 | 5.3128 | 130.7203 | 28.2258 | 361.0047 |
| Nov-17 | 680 | 639 | -6.0294 | -0.5847 | 3.5253 | 0.3418 | 135.3515 |
| Dec-17 | 639.1 | 646.3 | 1.1265 | 2.4337 | 2.7417 | 5.9228 | 20.0531 |
| Jan-18 | 642 | 855.95 | 33.3255 | 5.5931 | 186.3931 | 31.2827 | 768.4477 |
| Feb-18 | 855.95 | 834.55 | -2.5001 | -5.1733 | 12.9340 | 26.7630 | 65.6878 |
| Mar-18 | 838.1 | 864.25 | 3.1201 | -3.4343 | -10.7155 | 11.7944 | 6.1727 |
| Apr-18 | 860 | 1163.45 | 35.2848 | 6.4469 | 227.4781 | 41.5625 | 880.9159 |
| May-18 | 1160 | 1117.85 | -3.6336 | -0.0184 | 0.0668 | 0.0003 | 85.3457 |
| Jun-18 | 1119 | 1096.15 | -2.0420 | 0.1399 | -0.2856 | 0.0195 | 58.4713 |
| Jul-18 | 1114 | 1229.15 | 10.3366 | 5.7992 | 59.9441 | 33.6307 | 22.3915 |
| Aug-18 | 1239.95 | 1403.6 | 13.1981 | 2.6596 | 35.1017 | 7.0734 | 57.6605 |
| Sep-18 | 1409.9 | 1092.7 | -22.4980 | -6.9091 | 155.4413 | 47.7356 | 789.7621 |
| Oct-18 | 1085 | 1227.15 | 13.1013 | -5.0509 | -66.1738 | 25.5115 | 56.2009 |
| Nov-18 | 1229.95 | 1091.5 | -11.2565 | 4.4549 | -50.1468 | 19.8461 | 284.3004 |
| Dec-18 | 1130.95 | 1149.45 | 1.6357 | -0.9021 | -1.4756 | 0.8137 | 15.7518 |
| Jan-19 | 1140 | 1311.1 | 15.0087 | 0.2624 | 3.9383 | 0.0688 | 88.4373 |
| Feb-19 | 1301 | 1318.95 | 1.37970 | -0.9309 | -1.2843 | 0.8665 | 17.8501 |
| TOTAL |  |  | 128.9070 | 14.0499 | 689.778 | 324.4077 | 4201.537 |
|  |  |  | 5.6046 | 0.610865 |  |  |  |

$\boldsymbol{B e t a}(\boldsymbol{\beta})=\frac{\mathrm{n} \sum \mathrm{xy}-\sum \mathrm{x} \sum \mathrm{y}}{\mathrm{n} \sum \mathrm{x}^{2}-\left(\sum \mathrm{x}\right)^{2}}$
$={ }^{23(689.7781)-(14.0499)(128.9070)}$
24(324.4076)-(14.0499) ${ }^{2}$

Variance $\left(\sigma^{2}\right)=\frac{\sum(y-y)^{2}}{23}$
$=(5.6046)-(1.9347 * 0.6108)$
$=4.422$

Table 3 showing the fundamental information of Bajaj Finserv

| DATE | Open value | close value | $\mathrm{Ri}(\mathrm{y})$ | $\mathrm{Rm}(\mathrm{x})$ | $\mathrm{Ri} \mathrm{Rm}^{2}$ | $\mathrm{Rm} * \mathrm{Rm}$ | $(y-y)^{2}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Apr-17 | 4090 | 4568.65 | 11.7029 | 0.6075 | 7.1095 | 0.3690 | 87.3480 |
| May-17 | 4575 | 4191.3 | -8.3868 | 3.7456 | -31.4139 | 14.0295 | 115.4293 |
| Jun-17 | 4190 | 4116 | -1.7661 | -0.6282 | 1.1094 | 0.3946 | 16.9993 |
| Jul-17 | 4139.55 | 4999.7 | 20.7788 | 4.3615 | 90.6268 | 19.0226 | 339.3668 |
| Aug-17 | 5001.3 | 5503.6 | 10.0433 | -2.6068 | -26.1811 | 6.7954 | 59.0818 |
| Sep-17 | 5543.9 | 5146.55 | -7.1673 | -1.5285 | 10.9552 | 2.3363 | 90.7114 |
| Oct-17 | 5200.1 | 5024.2 | -3.3826 | 5.3128 | -17.9712 | 28.2258 | 32.9423 |
| Nov-17 | 5053.3 | 5223.55 | 3.3690 | -0.5847 | -1.9699 | 0.3418 | 1.0244 |
| Dec-17 | 5220 | 5328.4 | 2.0766 | 2.4337 | 5.0538 | 5.9228 | 0.0785 |
| Jan-18 | 5220 | 4810.8 | -7.8390 | 5.5931 | -43.8448 | 31.2827 | 103.9584 |
| Feb-18 | 4800 | 5056.85 | 5.3510 | -5.1733 | -27.6825 | 26.7630 | 8.9647 |
| Mar-18 | 5057.55 | 5178.55 | 2.3924 | -3.4343 | -8.2164 | 11.7944 | 0.0012 |
| Apr-18 | 5100 | 5482.55 | 7.5009 | 6.4469 | 48.3580 | 41.5625 | 26.4613 |
| May-18 | 5482 | 6048.45 | 10.3329 | -0.0184 | -0.1901 | 0.0003 | 63.6164 |
| Jun-18 | 6050 | 5818.65 | -3.8239 | 0.1399 | -0.5349 | 0.0195 | 38.2033 |
| Jul-18 | 5823 | 6985.9 | 19.9708 | 5.7992 | 115.8147 | 33.6307 | 310.2491 |
| Aug-18 | 7000.1 | 6754.85 | -3.5035 | 2.6596 | -9.3179 | 7.0734 | 34.3447 |
| Sep-18 | 6760 | 5988.65 | -11.4105 | -6.9091 | 78.8363 | 47.7356 | 189.5419 |
| Oct-18 | 5989 | 5402.5 | -9.7929 | -5.0509 | 49.4632 | 25.5115 | 147.6194 |
| Nov-18 | 5401.85 | 6007.3 | 11.2082 | 4.4549 | 49.9314 | 19.8461 | 78.3451 |
| Dec-18 | 6020 | 6481.3 | 7.6627 | -0.9021 | -6.9126 | 0.8137 | 28.1522 |
| Jan-19 | 6500 | 6093.15 | -6.2592 | 0.2624 | -1.6424 | 0.0688 | 74.2380 |
| Feb-19 | 6149.95 | 6466.75 | 5.1512 | -0.9309 | -4.7953 | 0.8665 | 7.8083 |
| TOTAL |  |  | 54.2091 | 14.0499 | 276.5854 | 324.4077 | 1854.487 |
|  |  |  | 2.356917 | 0.610865 |  |  |  |

$\operatorname{Beta}(\boldsymbol{\beta})=\frac{\mathrm{n} \sum \mathrm{xy}-\sum \mathrm{x} \sum \mathrm{y}}{\mathrm{n} \sum \mathrm{x}^{2}-\left(\sum \mathrm{x}\right)^{2}}$
Std Deviation $(\sigma)=\sqrt{80} .6298$
$=8.9794$

## Alpha ( $\propto$ ) $=\mathbf{y}-\boldsymbol{\beta x}$

$=(\mathbf{2} .356917)-(0.7709 * 0.6108)$
$=1.8860$

## $=\frac{1854.487}{23}$

$=\mathbf{8 0 . 6 2 9 8}$

Table 4 showing the fundamental Information of Tata consultancy services

| Date | open value | close <br> value | $\mathrm{Ri}(\mathrm{y})$ | $\mathrm{Rm}(\mathrm{x})$ | Ri *Rm | $\mathrm{Rm} * \mathrm{Rm}$ | $\mathrm{y}-\mathrm{y} 2$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Apr-17 | 1217.5 | 1136.05 | -6.6899 | 0.6075 | -4.0641 | 0.3690 | 94.8018 |
| May-17 | 1148.5 | 1272.18 | 10.7688 | 3.7456 | 40.3357 | 14.0295 | 59.6315 |
| Jun-17 | 1265 | 1182.18 | -6.5470 | -0.6282 | 4.1128 | 0.3946 | 92.0394 |
| Jul-17 | 1182 | 1427.03 | 20.7301 | 4.3615 | 90.4144 | 19.0226 | 312.7038 |
| Aug-17 | 1247.03 | 1248.38 | 0.1082 | -2.6068 | -0.2822 | 6.7954 | 8.6343 |
| Sep-17 | 1237.5 | 1218.5 | -1.5353 | -1.5285 | 2.3467 | 2.3363 | 20.9950 |
| Oct-17 | 1217.5 | 1308.15 | 7.4455 | 5.3128 | 39.5569 | 28.2258 | 19.3503 |
| Nov-17 | 1311 | 1317.13 | 0.4675 | -0.5847 | -0.2734 | 0.3418 | 6.6517 |
| Dec-17 | 1318.5 | 1350.28 | 2.4103 | 2.4337 | 5.8659 | 5.9228 | 0.4049 |
| Jan-18 | 1344.9 | 1555.88 | 15.6874 | 5.5931 | 87.7412 | 31.2827 | 159.7881 |
| Feb-18 | 1560 | 1519.13 | -2.6198 | -5.1733 | 13.5533 | 26.7630 | 32.1098 |
| Mar-18 | 1520.5 | 1424.65 | -6.3038 | -3.4343 | 21.6493 | 11.7944 | 87.4324 |
| Apr-18 | 1422.5 | 1765.7 | 24.1265 | 6.4469 | 155.5414 | 41.5625 | 444.3602 |
| May-18 | 1766.5 | 1744.8 | -1.2284 | -0.0184 | 0.0226 | 0.0003 | 18.2765 |
| Jun-18 | 1758 | 1847.2 | 5.0739 | 0.1399 | 0.7098 | 0.0195 | 4.1097 |
| Jul-18 | 1829.95 | 1941.25 | 6.0821 | 5.7992 | 35.2715 | 33.6307 | 9.2139 |
| Aug-18 | 1951 | 2078.2 | 6.5197 | 2.6596 | 17.3398 | 7.0734 | 12.0620 |
| Sep-18 | 2080.05 | 2184.5 | 5.0215 | -6.9091 | -34.6941 | 47.7356 | 3.8999 |
| Oct-18 | 2186 | 1937.6 | -11.3632 | -5.0509 | 57.3944 | 25.5115 | 207.6454 |
| Nov-18 | 1940.1 | 1970.6 | 1.5720 | 4.4549 | 7.0034 | 19.8461 | 2.1744 |
| Dec-18 | 1980.1 | 1893.55 | -4.3709 | -0.9021 | 3.9430 | 0.8137 | 55.0219 |
| Jan-19 | 1905 | 2014.6 | 5.7532 | 0.2624 | 1.5096 | 0.0688 | 7.3256 |
| Feb-19 | 2005 | 1984.25 | -1.0349 | -0.9309 | 0.9634 | 0.8665 | 16.6594 |
| TOTAL |  |  | 70.0737 | 14.0499 | 545.962 | 324.4077 | 1675.293 |
|  |  |  | 3.04668435 | 0.610865 |  |  |  |

$\operatorname{Beta}(\boldsymbol{\beta})=\frac{\mathrm{n} \sum x y-\sum x \Sigma y}{\mathrm{n} \Sigma \mathrm{x}^{2}-(\Sigma \mathrm{x})^{2}}$
$=23(545.962)-(14.0499)(70.0737)$
24(324.4076)-(14.0499) ${ }^{2}$
$=1.5931$
Variance $\left(\sigma^{2}\right)=\frac{\sum(y-y)^{2}}{23}$
$=(\mathbf{3 . 0 4 6 6})-(\mathbf{1 . 5 9 3 1} * \mathbf{0 . 6 1 0 8})$
$=2.073$

Std Deviation $(\sigma)=\sqrt{72} .8388$
$=8.5345$

Table 5 Showing the fundamental information of Infosys

| Date | open value | close value | $\mathrm{Ri}(\mathrm{y})$ | $\mathrm{Rm}(\mathrm{x})$ | Ri *Rm | $\mathrm{Rm} * \mathrm{Rm}$ | $(y-y)^{2}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Apr-17 | 513.55 | 459.7 | -10.4858 | 0.6075 | -6.3701 | 0.3690 | 142.9783 |
| May-17 | 462.4 | 488.48 | 5.6401 | 3.7456 | 21.1257 | 14.0295 | 17.3773 |
| Jun-17 | 484.5 | 467.83 | -3.4406 | -0.6282 | 2.1614 | 0.3946 | 24.1295 |
| Jul-17 | 467.5 | 505.65 | 8.1604 | 4.3615 | 35.5917 | 19.0226 | 44.7415 |
| Aug-17 | 503.5 | 457.65 | -9.1062 | -2.6068 | 23.7381 | 6.7954 | 111.8893 |
| Sep-17 | 457.6 | 449.38 | -1.7963 | -1.5285 | 2.7456 | 2.3363 | 10.6788 |
| Oct-17 | 454 | 460.83 | 1.5044 | 5.3128 | 7.9926 | 28.2258 | 0.0010 |
| Nov-17 | 462 | 487.48 | 5.5151 | -0.5847 | -3.2241 | 0.3418 | 16.3509 |
| Dec-17 | 488.75 | 519.65 | 6.3222 | 2.4337 | 15.3864 | 5.9228 | 23.5296 |
| Jan-18 | 520 | 575.33 | 10.6403 | 5.5931 | 59.5127 | 31.2827 | 84.0681 |
| Feb-18 | 575 | 587.13 | 2.1095 | -5.1733 | -10.9134 | 26.7630 | 0.4071 |
| Mar-18 | 586.73 | 567.2 | -3.3286 | -3.4343 | 11.4314 | 11.7944 | 23.0413 |
| Apr-18 | 567.75 | 599.7 | 5.6274 | 6.4469 | 36.2797 | 41.5625 | 17.2719 |
| May-18 | 600 | 615.95 | 2.6583 | -0.0184 | -0.0489 | 0.0003 | 1.4085 |
| Jun-18 | 615.95 | 653.38 | 6.0767 | 0.1399 | 0.8501 | 0.0195 | 21.2085 |
| Jul-18 | 656.95 | 682.5 | 3.8891 | 5.7992 | 22.5541 | 33.6307 | 5.8451 |
| Aug-18 | 682.93 | 720 | 5.4280 | 2.6596 | 14.4365 | 7.0734 | 15.6543 |
| Sep-18 | 729 | 727.85 | -0.1577 | -6.9091 | 1.0899 | 47.7356 | 2.6545 |
| Oct-18 | 735.1 | 686.25 | -6.6453 | -5.0509 | 33.5650 | 25.5115 | 65.8836 |
| Nov-18 | 693.9 | 666.5 | -3.9487 | 4.4549 | -17.591 | 19.8461 | 29.3787 |
| Dec-18 | 670.5 | 659.85 | -1.5883 | -0.9021 | 1.4328 | 0.8137 | 9.3629 |
| Jan-19 | 661 | 749.6 | 13.4039 | 0.2624 | 3.5171 | 0.0688 | 142.3825 |
| Feb-19 | 753.8 | 733.95 | -2.63332 | -0.9309 | 2.4513 | 0.8665 | 16.8497 |
| TOTAL |  |  | 33.84494 | 14.0499 | 257.7147 | 324.4077 | 827.0936 |
|  |  |  | 1.471519 | 0.610865 |  |  |  |

$\boldsymbol{B e t a}(\boldsymbol{\beta})=\frac{\mathrm{n} \sum \mathrm{xy}-\sum \mathrm{x} \sum \mathrm{y}}{\mathrm{n} \sum \mathrm{x}^{2}-(\Sigma \mathrm{x})^{2}}$
$={ }^{23(257.7147)-(14.0499)(33.8449)}$
24(324.4076)-(14.0499) ${ }^{2}$
$=0.7505$

Variance $\left(\sigma^{2}\right)=\frac{\sum(y-y)^{2}}{23}$
$=\frac{827.0936}{23}$

Std Deviation $(\sigma)=\sqrt{35.9605}$
$=5.9967$

Alpha $(\alpha)=\mathbf{y}-\boldsymbol{\beta x}$
$=(1.4715)-(0.7505 * 0.6108)$

Table 6

Consolidated Values of Beta of Different Stocks

| STOCKS | BETA |
| :---: | :---: |
| Kotak Mahindra Bank | 1.4668 |
| Tata investment corporation | 1.3667 |
| NIIT Tech | 1.9347 |
| Bajaj Finserv | 0.7709 |
| TCS | 1.5931 |
| Infosys | 0.7505 |



Table 7

Consolidated Values of Standard Deviation of Different Stocks

| STOCKS | SD |
| :---: | :---: |
| Kotak Mahindra bank | 6.1793 |
| Tata investment corporation | 9.2790 |
| NIIT Tech | 13.5157 |
| Bajaj finserv | 0.7709 |
| TCS | 8.5345 |
| Infosys | 5.9967 |



Table 8

## Consolidated Values of Variance of Different Stocks

| STOCK | VARIANCE |
| :---: | :---: |
| Kotak Mahindra bank | 38.140 |
| Tata investment corporation | 86.1003 |
| NIIT Tech | 182.6755 |
| Bajaj finserv | 80.6298 |
| TCS | 72.8388 |
| Infosys | 35.9605 |



Table 9

## Consolidated Values of Alpha of Different Stocks

| STOCKS | ALPHA |
| :---: | :---: |
| Kotak Mahindra bank | 0.6697 |
| Tata investment corporation | 0.5479 |
| NIIT Tech | 4.4228 |
| Bajaj finserv | 1.8860 |
| TCS | 2.0735 |
| Infosys | 1.0131 |



Table 10

## Consolidated Values of Return of Different Stocks

| Kotak Mahindra bank | 36.0105 |
| :---: | :---: |
| Tata investment corporation | 31.8028 |
| NIIT Tech | 128.9070 |
| Bajaj finserv | 54.2091 |
| TCS | 70.0737 |
| Infosys | 33.8449 |



Table 11

## Overall Risk of different companies put together

| COMPANY | VARIANCE | $\boldsymbol{\beta}^{\mathbf{2}}$ | MARKET <br> VARAINCE <br> $\left(\boldsymbol{\sigma \boldsymbol { m } ) ^ { \mathbf { 2 } }}\right.$ | SYSTEMATIC <br> RISK <br> $(\boldsymbol{\sigma m})$ | UNSYSTEMATIC <br> Risk <br> $\left(\boldsymbol{\sigma e} \boldsymbol{i}^{\boldsymbol{2}}\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| kotak Mahindra <br> bank | 38.1440 | 2.1515 | 13.7314 | 29.54313786 | 8.596862 |
| Tata investment <br> corporation | 86.1003 | 1.8679 | 13.7314 | 25.64845488 | 60.45185 |
| NIIT Tech | 182.6755 | 3.7431 | 13.7314 | 51.39751025 | 13.2780 |
| Bajaj Finserv | 80.6298 | 0.5943 | 13.7314 | 8.160389903 | 72.46941 |
| TCS | 72.8388 | 2.538 | 13.7314 | 34.84984844 | 37.98895 |
| Infosys | 35.9605 | 0.5633 | 13.7314 | 7.734214483 | 28.22629 |

Table 12

## Excess return to Beta ratio and Ranking

| Companies | RETURN | RF | EXCESS <br> RETURN <br> (Ri - Rf) | BETA | RI-RF/B | RANK |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| KotakMahindra <br> Bank | 36.0105 | 0.08 | 35.9305 | 1.4668 | 24.49584 | 5 |
| Tata Investment <br> corporation | 31.8028 | 0.08 | 31.7228 | 1.3667 | 23.21124 | 6 |
| NIIT Tech | 128.907 | 0.08 | 128.827 | 1.9347 | 66.58758 | 2 |
| Bajaj finserv | 54.2091 | 0.08 | 54.1291 | 0.7709 | 70.21546 | 1 |
| TCS | 70.0737 | 0.08 | 69.9937 | 1.5931 | 43.93553 | 4 |
| Infosys | 33.8449 | 0.08 | 33.7649 | 0.7505 | 44.98987 | 3 |

Table 13
Calculation of Ci and Finding out $\mathrm{C}^{*}$ (cut-off point)

| Companies | Ri-Rf*B | UNSYST | Ri-Rf- <br> b/unsys | 1+var | b2/unsys | b2/unsys | $\mathbf{4 * 2}$ | $\mathbf{3 / 7}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Kotak <br> Mahindra <br> bank | 35.8931 | 8.5968 | 4.1751 | 39.144 | 0.250266 | 1.3328 | 52.1713 | 0.0800 |
| Tata <br> investment <br> corporation | 31.6934 | 60.45185 | 0.5242 | 87.1003 | 0.030898 | 0.1895 | 16.5088 | 0.0317 |
| NIIT Tech | 128.752 | 131.278 | 0.9807 | 183.6755 | 0.028513 | 0.0872 | 16.0311 | 0.0611 |
| Bajaj finserv | 54.1474 | 72.46941 | 0.7471 | 81.6298 | 0.008201 | 0.1581 | 12.9062 | 0.0578 |
| TCS | 69.9462 | 37.98895 | 1.8412 | 73.8388 | 0.066808 | 0.3016 | 22.2707 | 0.0826 |
| Infosys | 33.7848 | 28.22629 | 1.1969 | 36.9605 | 0.019955 | 0.4059 | 15.0034 | 0.0797 |

Table 14
Calculation of proportion of investment on stocks in the near Future

| Company | Zi | Xi | $\%$ |
| :--- | :--- | :--- | :--- |
| TCS | 27.14825 | 0.116686 | 11.6686 |
| Kotak Mahindra bank | 157.0719 | 0.675111 | 67.51113 |
| Infosys | 48.44058 | 0.208203 | 20.82027 |
| TOTAL | 232.6607 | 1 | 100 |

## PERCENTAGE OF INVESTMENT



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## Conclusion and Suggestions:-

- The Analysis has pointed out about the systematic risk of Different stocks. Systematic risk of NIIT Tech is comparatively high (51.39751025) followed by TCS (34.84984844).
- The Analysis has pointed out that Un systematic risk of different stocks. Unsystematic risk of Bajaj Finserv is comparatively high (72.46941) followed by Tata Investment Corporation (60.45185).
- The Analysis has proved that Bajaj finserv has the highest return which is 70.21546 hence to be ranked amongst top followed by NIIT 66.58758 .
- The analysis has paved a way to judge the quantum of investment in the long run which is determined by CI values. However in the overall quantum of investment Kotak Mahindra Bank has emerged as top class by securing $67 \%$ of the investment.
- The overall analysis has proved that these stocks are meant for aggressive investment. The holding period is determined as 3 to 6 months.
- The investor can book these stocks in the Months of March, June, \& August \& Can sell the same in the Months of July, September, \& December 2019
- Effect of Elections also stimulated the volatility \& Price movements because of which more investors are getting attracted towards capital market.
- The behavioral Gap syndrome can be reduced by "Gap Analysis" and hedging with Index which may yield better results.


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[^0]:    -1 1 - 2 - 3

