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Is Risk Adjusted Performance: A Better Evaluation measure for Securities

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ABSTRACT

The term "security" refers to a negotiable financial instrument that holds some type of monetary value. A security can represent ownership in a corporation as stock, a creditor relationship with a governmental body or bond or option. Unfortunately, whenever an investor holds a security, risk is automatically transferred. Risk is the chance that an investment's actual gains will differ from an expected return. Ability to handle risk is how willing the investor is to accept the chance of losing money for higher return. Investor's personal risk tolerance should dictate his investment choices. Therefore, before making an investment decision, it is wise to adjust the risk in terms at the reward per unit of risk. One of the popular methods for Risk Adjusted Performance Measure (RAPM) of the security is *Jensen Measure/ Ratio*. The current research articles try to measure the differential between the actual return earned on a security and the return expected the security given its level of risk. In the present study, monthly return of five notable IT sector securities are considered for the evaluation and monthly return of NIFTY 50 (^NSEI)is the base for the bench mark criterion. The study period is the last three year.

Keywords: Security, Investment Risk, Risk Adjusted Performance Measure, Jensen Measure/Ratio

INTRODUCTION

A financial instrument that is negotiable and has some form of monetary value is referred to as a "security." A security can reflect rights to ownership through the ownership of an option, a creditor relationship with a governmental organisation or company through the ownership of that entity's bond, or ownership of stock in a firm. Unfortunately, risk is immediately transmitted whenever an investor owns a security. Risk is the possibility that a result or investment won't produce the desired results or return. Risk involves the potential for losing all or a portion of the initial investment. The investor's willingness to accept the possibility of financial loss in pursuit of higher returns is referred to as their ability to handle risk. In order to enable investors and financial analysts make more informed portfolio allocation decisions that may boost returns while lowering risk, risk-adjusted returns can help better comprehend the amounts of risk they assume. Risk-adjusted return serves the objective of assisting investors in determining if the risk incurred was worthwhile given the anticipated benefit.

Theoretical support:

By definition, the Jensen's alpha, also known as the Jensen's measure, is a risk-adjusted performance metric that shows whether the average return on an investment is higher or lower than what the Capital Asset Pricing Model (CAPM) predicts, given the investment's beta and the market return as a whole.

The Jensen's measure, which is based on statistics, quantifies the fraction of a security's return that cannot be explained by market movement and predicts how the security will move in relation to market movement. It

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displays how much the security has outperformed or underperformed given its level of risk in relation to the market. The Capital Asset Pricing Model, a market model, predicts the theoretical expected return/performance (CAPM). The relevant asset's risk-adjusted return is estimated by the model using statistical techniques. The amount that an investment returned above or below this anticipated return is measured by the Jensen's Alpha, also known as simply "Alpha".

The Jensen's measure, also known as Jensen's alpha, is a risk-adjusted performance metric that measures whether the average return on an investment or portfolio is higher or lower than the return forecasted by the Capital Asset Pricing Model (CAPM), given the portfolio's beta and the market's overall return. It will be calculated using Jensen's formula.The formula for Jensen's alpha can be presented as follows:

$\alpha = R_p - [R_f + \beta (R_m - R_f)]$

Where:

α = Jensen's alpha; R_p = Portfolio's Realized Return; R_f = Risk-Free Rate; β = Beta of the Portfolio; R_m = Expected Market Return; R_f = Risk-Free Rate;

Note that the portfolio's minimum expected return can be written as:

$E(R) = R_f + \beta (R_m - R_f)$

Hence, $\alpha = R_p - E(R)$

To put it in words, the formula goes like this:

Jensen's Alpha = Portfolio's Realized Return – [Risk-Free Rate + Beta of the Portfolio X (Expected Market Return – Risk-Free Rate)] OrJensen's Alpha = Portfolio's Realized Return – Expected Return

The Significance of Jensen's alpha:

According to the Jensen's alpha principle, a portfolio's expected return increases when beta, its measure of risk, rises. It implies that in exchange for taking on greater risk, investors should receive a better return. Therefore, an investment can be said to have performed extremely well if it generates more income than the projected risk-adjusted value, as shown by a positive alpha value, and more income than the amount anticipated by the market. It might be claimed that the investor outperformed the market.

Jensen's alpha provides assistance in determining if a portfolio's higher returns are the consequence of skilful investment techniques or just of taking on greater risks. It functions as a metric to assess fund managers' effectiveness in creating value for investors, hence exposing the proficiency of portfolio managers. The risk-adjusted performance perspective offered by Jensen's Alpha facilitates the process of identifying and validating superior investing strategies. Jensen's alpha, which offers insightful information about the risk-adjusted performance of assets and the efficacy of portfolio managers, is a critical instrument in portfolio management. Investing decisions can be modified and long-term financial results can be attained by taking Jensen's alpha into account as part of a thorough evaluation process.

In finance, Jensen's alpha is used to calculate a security's abnormal return, which is above the expected return determined using the CAPM. The Jensen has a solid base, but it is not without faults. According to proponents of the Efficient Market Hypothesis (EMH), the market has already taken into account all available information, making it impossible for investors to continuously exceed it. They contend that, as opposed to the investors' skill, any positive Jensen Ratio value simply results from luck or chance. As is to be expected, they support their theory by pointing out that the majority of actively managed investors outperform passive index funds.

A positive value When accounting for risk, Jensen's alpha shows that the portfolio has done better than expected. A negative value, on the other hand, indicates underperformance. In relation to the risks taken, this metric is a useful tool for investors to evaluate how well their money is being managed.

Scope of the study:

The study here aims to measure the difference between the actual return earned on a security and the return expected the security given its level of risk. Monthly return of five notable IT sector securities namely Tata Consultancy Services Limited (TCS.BO),Infosys Limited (INFY), HCL Technologies Limited (HCLTECH.NS), Wipro Limited (WIT) and Tech Mahindra Limited (TECHM.BO)are considered for the evaluation and monthly return of NIFTY 50 (^NSEI) is the base for the bench mark criterion. The study period is the three year from 01-01-2019 to 31.12-2022.

Significance of the study:

A shrewd investor will always wonder if the investment's return justifies the risk. Risk is automatically transmitted if an investor owns a security. The investor's willingness to accept the possibility of financial loss in

pursuit of higher returns is referred to as their ability to handle risk. How much money to invest in a given security should depend on the investor's personal risk tolerance. Therefore, it is wise to adjust the risk in terms of the benefit per unit of risk before making an investment decision. The risk-adjusted performance of the investment can be measured using a variety of techniques. Jensen Measure/Ratio is one of the widely used techniques for Risk Adjusted Performance Measurement (RAPM) of the security.The Jensen's Performance Index, also known as Jensen's Alpha or Jensen's Ratio, is a method for computing a security's returns after controlling for risk. It is named after the eminent economist Michael Jensen who developed it in 1968. Given the security's beta, the overall market returns, and the risk-free rate of return, it calculates the returns that have exceeded or fallen short of the expected return based on the Capital Asset Pricing Model (CAPM). Based on the portfolio's beta and anticipated market return, the outcome of this computation will be useful in calculating the return on the investment.The better the risk-adjusted returns, the higher the ratio. Jensen's metric compares a fund manager's performance to the potential returns on an investment in the market. Treynor, Sharpe, and Jensen ratios, each slightly different, integrate risk and return performance into a single value.

METHODOLOGY

The present research is an analytical in nature.The current research articles try to measure the differential between the actual return earned on a security and the return expected the security given its level of risk. In the present study, monthly return of five notable IT sector securities namely Tata Consultancy Services Limited (TCS.BO), Infosys Limited (INFY), HCL Technologies Limited (HCLTECH.NS), Wipro Limited (WIT) and Tech Mahindra Limited (TECHM.BO)are considered for the evaluation and monthly return of NIFTY 50 (^NSEI) is the base for the bench mark criterion. The study period wasfrom 01-01-2019 to 31.12-2022.

RESULTS AND DISCUSSION

Table 1 shows monthly return of the securities and the NIFTY 50. The Table 1 clearly demonstrates that the average monthly return for Infosys Limited (INFY) is 2.1% and the average monthly return for Tata Consultancy Services Limited (TCS.BO) is 1.6%. The monthly returns for Wipro Limited (WIT) are 1.2%, Tech Mahindra Limited (TECHM.BO) are 1.56%, and HCL Technologies Limited (HCLTECH.NS) are 2.38%. In line with the aforementioned, NIFTY 50's (NSEI) monthly return was 1.4%.

The Table 1 shows that Infosys Limited's (INFY) average yearly return is 19.66% and Tata Consultancy Services Limited's (TCS.BO) average yearly return is 25.25%. The annual returns for Wipro Limited (WIT), Tech Mahindra Limited (TECHM.BO), and HCL Technologies Limited (HCLTECH.NS) are 14.64%, 18.77%, and 28.64%, respectively. According to the foregoing, the NIFTY 50's (NSEI) annual return was 16.96%.

The beta coefficient is individually determined in the current analysis. The magnitude of the outcome variable's change for each unit of change in the predictor variable is known as the beta coefficient. A stock's volatility can be compared to the systematic risk of the entire market using a beta coefficient. A standardised beta coefficient measures how strongly each independent variable has an impact on the dependent variable. The effect is stronger the higher the beta coefficient's absolute value. Thus, the study shows that beta of Infosys Limited (INFY) is stronger followed byTech Mahindra Limited (TECHM.BO) and HCL Technologies Limited (HCLTECH.NS).

The Jensen's measure, or Jensen's alpha (α), is then derived. According to the study, HCL Technologies Limited's (HCLTECH.NS) Jensen's Alpha Coefficient is high at 12.298%. Following it,Infosys Limited (INFY) at a rate of 8.522%and Tata Consultancy Services Limited (TCS.BO) at a rate of 7.709%. This demonstrates that these companies' performance levels in terms of returns are far higher than what investors had anticipated.

Findings and Conclusion:

Jensen's Alpha assesses the amount of risk taken to earn a return in order to calculate the return on an investment. Comparing multiple individual securities is made easier by using risk-adjusted returns. A good ratio is normally one above 1, with 2 to 3 being outstanding and anything higher being a terrific wager. Investors are able to examine the excess profits they might anticipate in exchange for each unit of risk in this way.It is advised to increase investments in HCL Technologies Limited (HCLTECH.NS), Infosys Limited (INFY), and Tata

Table 1 : Monthly return- IT sector securities and NIFTY 50 (^NSEI)

NSEI	Tata Consultancy Services Limited (TCS.BO)	Infosys Limited (INFY)	HCL Technologies Limited (HCLTECH.NS)	Wipro Limited (WIT)	Tech Mahindra Limited (TECHM.BO)
-0.06356	-0.0355	-0.0812	-0.09344	-0.0460	-0.06475
-0.23246	-0.08891	-0.18471	-0.18331	-0.1014	-0.24056
0.1468	0.1133	0.12423	0.245532	0.0612	-0.02019
-0.02836	-0.02149	-0.01408	0.012326	0.0060	-0.02875
0.075342	0.056123	0.07641	0.011995	0	0.024604
0.074873	0.099395	0.3302	0.266409	0.3051	0.254945
0.028361	-0.00922	-0.0194	-0.01228	-0.0046	0.095667
-0.01229	0.104217	0.0960	0.168779	0.0930	0.068133
0.035105	0.069577	0.0333	0.040278	0.0297	0.027788
0.113941	0.009654	0.0780	-0.01907	0.0640	0.09722
0.078094	0.07131	0.1136	0.150894	0.0970	0.110598
-0.02483	0.084559	-0.0041	-0.03398	0.0884	-0.01172
0.065609	-0.06789	0.0142	-0.00098	-0.0011	-0.04477
0.011119	0.097219	0.0934	0.080488	0.0342	0.079088
-0.00406	-0.04381	-0.0341	-0.08518	0.1293	-0.02976
0.065046	0.039676	0.0696	0.062955	0.1075	0.06249
0.008901	0.064155	0.1070	0.040521	-0.0151	0.071684
0.002643	-0.05314	0.0438	0.042145	0.0665	0.10442
0.086858	0.198048	0.0768	0.160481	0.1212	0.228803
0.028365	-0.00318	-0.0659	0.082255	-0.0546	-0.04584
0.003037	-0.09954	0.00134	-0.10613	0.0147	0.070821
-0.03896	0.041184	0.0223	0.003682	-0.0468	0.042164
0.021836	0.057998	0.1209	0.158477	0.1428	0.173425
-0.00082	0.000281	-0.0687	-0.16655	-0.2120	-0.1738
-0.03149	-0.04738	-0.0470	0.033679	-0.0503	-0.0462
0.039946	0.051835	0.1081	0.032654	0.0576	0.06258
-0.02074	-0.05047	-0.2016	-0.07261	-0.1647	-0.16191
-0.03029	-0.0522	-0.0508	-0.01957	-0.0636	-0.06024
-0.0485	-0.02305	-0.0075	-0.06486	-0.1120	-0.15341
0.087324	0.010887	0.0529	-0.02553	-0.0018	0.049215
0.03503	-0.02446	-0.0610	0.001156	-0.0547	0.041434
-0.03744	-0.06445	-0.0726	-0.00703	-0.0598	-0.06362
0.053693	0.06272	0.1037	0.116694	-0.0021	0.05485
0.041425	0.065183	0.0983	0.087276	0.0893	0.012976
-0.03481	-0.03925	-0.1149	-0.07272	-0.0898	-0.04004
Performance Indicators					
Average Monthly Return 0.01413	0.016383	0.0210	0.02387	0.0122	0.015639
Average Yearly Return 0.16962	0.196595	0.2525	0.286441	0.1464	0.187662
Covariance	0.002364	0.0042	0.00411	0.0030	0.004219
Beta	0.54279	0.9789	0.94374	0.7026	0.96863
Expected Return of the Security E(RS)	0.11950	0.1673	0.16346	0.1370	0.16619
Jensen Measure	7.709%	8.522%	12.298%	0.947%	2.147%

Source: Yahoo Finance

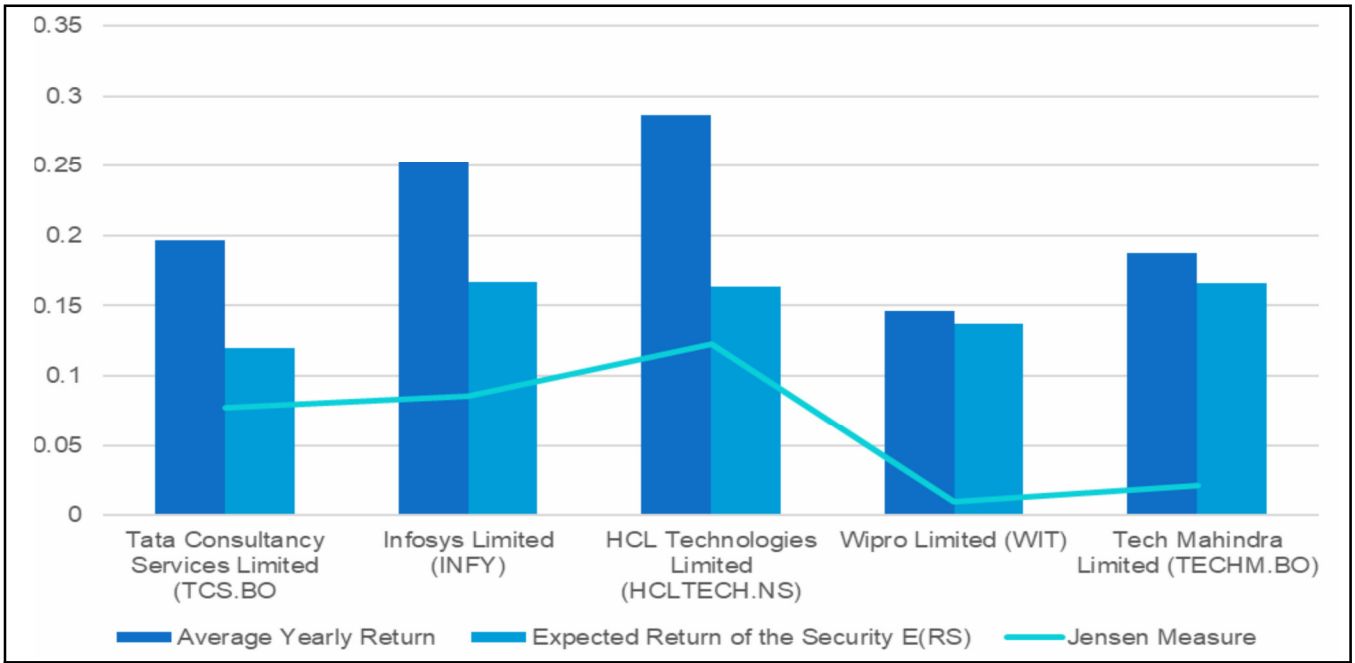

Fig. 1 : Performance indicators

Consultancy Services Limited (TCS.BO) stocks since their alpha values in the current study are excellent. While the investment in Wipro Limited (WIT) is still undergoing a more thorough analysis, Tech Mahindra Limited's (TECHM.BO) alpha value is good.

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