

SECURITY ANALYSIS OF SELECTIVE STOCKS FROM FMCG, IT AND BANKING SECTORS

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Abstract:

The stock market is a massive area to explore securities to invest in and security analysis is a very crucial part. In order to achieve the desired returns from the investments, security analysis helps an investor to understand the market conditions and stock prices in the market by gathering historical data to forecast the future prices.

Main itinerary of the following study is to find the suitable securities which can be considered for making the portfolio. Methods like Markowitz portfolio theory, Sharpe single index model and CAPM are used to determine the returns based on the risk associated with individual stock, the securities are then ranked based on their optimal proportions which are calculated from the above-mentioned methods.

For the analysis, five stocks were chosen from each sector during the period of 1st January 2015 to 28th February 2020 to conduct the analysis. All the 15 stocks are put together for analysis to shortlist few stocks which are lucrative. The formulae from the Markowitz portfolio theory, Sharpe index model and CAPM are bit too complex to calculate manually, therefore it was simplified and calculated in the Excel while following exact procedure stated by these methods.

The results of the analysis show how each sector is doing in the market with respect to the market index BSE Sensex and conclusive statements have been made based on the assimilated results. According to the analysis, FMCG sector has been doing well compared to the IT and banking sectors. This is due to the underlying market conditions and performance of the stocks in those sectors are comparatively less to the market index.

I. INTRODUCTION

Security analysis is an essential or crucial for making investment decisions. In the current financial market scenario, there are many complications while making an investment. Generally, higher returns are incentives for investments, which can be attained through investments in cooperative or commercial banks. In finance arena, investors always expect high returns for their investments, but usually wherever the return is higher, there the risk is also higher. Most of the investments contain a risk factor to certain degree our main aim to reduce the risk and maximize the return.

From the above discussion, the word “investment” comes into focus. Making an investment decision requires a thorough security analysis. Hence there is a need to understand what an investment means.

Financial markets mobilize the investments that are required for the corporate entities. They also act an investor’s market place as they are attracted to the returns gained through the investments. Hence this requires to understand the true meaning of investment.

Investment can be defined as an action that requires funds either in financial form or physical form today to expect returns tomorrow. The returns may vary from investor to investor depending on the investment they made and the varying risk that is applicable to the individual stock and also the market.

Investment is an action taken by the people who have savings. Savings can be interpreted as the difference between the income and expenditure, where income is more than the expenditure. While, all investors are savers, the converse is not true. The essential characteristic of investment being the expectation of returns.

Investment is classified as

- Financial investment
- Economic investment

In financial investments, returns are derived in the form of interests, dividends, and premium. Therefore, purchasing shares, post office certificates, debentures and insurance policies are considered as the financial investments.

Investments with an economic motive refer to those with an expectation of increase in the goods and services produced by the nation/economy. The goods and services form the Capital Stock, i.e., the stock which acts as a catalyst to the production of the end consumer goods. Investments, in this scenario, refer to the capital introduced, so as to develop the infrastructure of the nation, so as to promote the productivity and the production. The economic investments, are therefore, referred to as capital investments, and can be made up on machinery, equipment, plant, building, tools, and other such fixed assets and factors of production.

It can be clearly understood that, despite the differences, both the financial and the economic investments are inter-dependent. A firm or an industry requires both sorts of investments so as to sustain and survive. While the financial investments bring in the flow of funds, economic investments bring in the development of the firms.

RESEARCH METHODOLOGY

OBJECTIVES OF THE STUDY

- To perform risk-return analysis using Sharpe index model, Markowitz model and CAPM to select stocks.
- To compare the select stocks with market index and sector specified industries.
- To examine the proportions of investment in the select stocks.

STATISTICAL TOOL

The statistical tool that is used for the analysis part of the study is MS Excel. Through Excel, formulae related to Markowitz portfolio theory, Sharpe index model and CAPM have been applied to the data. Covariance, standard deviation (risk) and average returns are calculated. With the help of the solver, the optimum portfolio can be found.

SAMPLE SIZE AND SAMPLING DESIGN

For this study, fast moving consumer goods (FMCG), information technology (IT) and banking sectors are considered. From each sector about 5 companies are taken as a sample study. The sample size is 15 i.e. 5 stocks from each sector. The type of sampling is "Convenience Sampling".

SOURCES OF DATA

The data considered for this study is secondary data. Data is collected from the official website of BSE.

DATA ANALYSIS AND RESULTS

CONSTRUCTION OF PORTFOLIO USING MARKOWITZ PORTFOLIO THEORY

Variance and standard deviation are calculated with the returns. After calculating the covariances, the solver in Excel helps in obtaining a solution or optimized portfolio.

Optimised Weights	
STOCKS	PROPORTIONS
Nestle	0.0995899
Britannia	0.0309265
PGHH	0.2433809
Dabur	0.1064173
ITC	0.079005
TCS	0.0878085
Wipro	0.0575706
Tech	0.0161667
Infosys	0.0170451
Oracle	0.1224522
HDFC bank	0.0814164
AXIS	0.020032
SBI	0
KOTAK	0.031245
ICICI	0.0069438
Sum	1

New order

name	proportions	percentage
PGHH	0.243380888	24.3380888
Oracle	0.122452217	12.2452217
Dabur	0.106417338	10.6417338
Nestle	0.099589948	9.95899481
TCS	0.087808455	8.78084552
HDFC bank	0.081416376	8.14163755

ITC	0.079005022	7.9005022
Wipro	0.057570618	5.75706183
KOTAK	0.031245041	3.12450415
Britannia	0.030926474	3.09264736
AXIS	0.020032007	2.00320073
Infosys	0.017045122	1.70451221
Tech M	0.016166682	1.61666821
ICICI	0.006943812	0.69438117
SBI	0	0
sum	1	100

CONSTRUCTION OF PORTFOLIO USING SHARPE INDEX MODEL

securities	expected returns (ri)	beta (β)	unsystematic risk	systematic risk	total risk	error	σ^2ei
Nestle	1.496	0.501	2.022	0.184	2.207	1.423	3.139
Britannia	2.050	0.669	3.991	0.328	4.320	1.999	8.633
PGHH	1.251	0.297	1.437	0.065	1.502	1.199	1.801
Dabur	1.413	0.645	1.836	0.305	2.141	1.356	2.903
ITC	1.526	0.873	2.482	0.560	3.042	1.576	4.794
TCS	1.955	0.437	3.830	0.140	3.970	1.958	7.771
Wipro	1.956	0.477	4.038	0.167	4.205	2.010	8.453
Tech M	2.639	0.662	7.196	0.321	7.517	2.684	20.174
Infosys	2.391	0.637	5.951	0.298	6.248	2.440	15.248
Oracle	1.371	0.514	1.930	0.194	2.124	1.390	2.951
HDFC Bank	1.581	0.910	2.439	0.609	3.048	1.562	4.762
Axis	1.503	1.319	2.206	1.276	3.482	1.486	5.173
SBI	1.686	1.547	2.877	1.757	4.634	1.697	7.862
Kotak	1.838	1.021	3.286	0.765	4.051	1.813	7.346
ICICI	1.496	1.507	2.190	1.666	3.856	1.480	5.708

In the table below, the securities are arranged in a descending order of its expected returns and then excess returns to beta ratio found.

Excess return to beta ratio

SECURITIES	EXPECTED RETURNS(Ri)	BETA (β)	Ri-Rf	Ri-Rf/ β	σ^2ei	β/σ^2ei
TECH M	2.639	0.662	2.634	3.981	20.174	0.033
INFOSYS	2.391	0.637	2.386	3.748	15.248	0.042
BRITANNIA	2.050	0.669	2.045	3.058	8.633	0.077
WIPRO	1.956	0.477	1.951	4.091	8.453	0.056
TCS	1.955	0.437	1.950	4.466	7.771	0.056
KOTAK	1.838	1.021	1.833	1.795	7.346	0.139
SBI	1.686	1.547	1.681	1.086	7.862	0.197
HDFC BANK	1.581	0.910	1.576	1.731	4.762	0.191
ITC	1.526	0.873	1.521	1.742	4.794	0.182
AXIS	1.503	1.319	1.497	1.136	5.173	0.255
ICICI	1.496	1.507	1.491	0.990	5.708	0.264
NESTLE	1.496	0.501	1.490	2.975	3.139	0.160

DABUR	1.413	0.645	1.408	2.184	2.903	0.222
ORACLE	1.371	0.514	1.366	2.660	2.951	0.174
PGHH	1.251	0.297	1.246	4.197	1.801	0.165

After calculating the excess returns to beta ratios for all the securities, a new order or new table is built by arranging them in descending order of their excess returns to beta ratio. It can be seen that ICICI has the highest 'c' value, therefore cutoff point is 4.053.

New order

SECURITIES	$R_i - R_f / \beta$	$(R_i - R_f) * \beta / \sigma_{ei}^2$	$\Sigma(R_i - R_f) * \beta / \sigma_{ei}^2$	β^2 / σ_{ei}^2	$\Sigma \beta^2 / \sigma_{ei}^2$	c^*
TCS	4.427	0.110	0.110	0.025	0.025	0.098
PGHH	4.140	0.205	0.315	0.049	0.073	0.285
WIPRO	4.056	0.110	0.425	0.027	0.100	0.385
TECH M	3.956	0.086	0.511	0.022	0.122	0.465
INFOSYS	3.722	0.100	0.611	0.027	0.149	0.557
BRITANNIA	3.032	0.158	0.769	0.052	0.200	0.712
NESTLE	2.941	0.238	1.007	0.080	0.280	0.945
ORACLE	2.627	0.238	1.245	0.089	0.370	1.185
DABUR	2.158	0.313	1.557	0.143	0.513	1.519
KOTAK	1.778	0.255	1.812	0.142	0.655	1.810
ITC	1.722	0.277	2.089	0.159	0.814	2.131
HDFC BANK	1.713	0.301	2.391	0.174	0.988	2.479
AXIS	1.123	0.382	2.772	0.336	1.324	3.006
SBI	1.075	0.331	3.103	0.305	1.629	3.472
ICICI	0.978	0.394	3.497	0.398	2.026	4.053

With the cutoff point as the reference and a benchmark, it is easy to find 'z' which is called as the related investment. In simple terms, relative investment is the returns which are earned over a period of time with respective of a benchmark.

SECURITIES	$R_i - R_f / \beta$	β / σ_{ei}^2	c^*	Z	ΣZ	X
TCS	4.427	0.056	0.098	0.021	0.021	0.590
PGHH	4.140	0.165	0.285	0.014	0.035	0.405
WIPRO	4.056	0.056	0.385	0.000	0.036	0.005
TECH M	3.956	0.033	0.465	-0.003	0.032	
INFOSYS	3.722	0.042	0.557	-0.014	0.019	
BRITANNIA	3.032	0.077	0.712	-0.079	-0.060	
NESTLE	2.941	0.160	0.945	-0.177	-0.238	
ORACLE	2.627	0.174	1.185	-0.248	-0.486	
DABUR	2.158	0.222	1.519	-0.421	-0.907	
KOTAK	1.778	0.139	1.810	-0.316	-1.223	
ITC	1.722	0.182	2.131	-0.425	-1.648	

HDFC BANK	1.713	0.191	2.479	-0.447	-2.095	
AXIS	1.123	0.255	3.006	-0.747	-2.842	
SBI	1.075	0.197	3.472	-0.586	-3.428	
ICICI	0.978	0.264	4.053	-0.812	-4.240	

The relative investment 'z' is 0 and any stock after is in the negative. This is implying that relative investment would be negative or one would start losing the investment eventually within a period of time. Therefore, the stocks after the Wipro were not considered for the proportions. One can choose not to opt Wipro since the relative investment shows 0 that is no profit or no loss.

CAPITAL ASSET PRICING MODEL (CAPM)

Stocks	Estimated Returns	Expected returns	Remarks
Nestle	0.0829	0.02475234	under-priced
Britannia	0.0645	0.02638518	under-priced
PGHH	0.0578	0.02276458	under-priced
Dabur	0.0702	0.02615095	under-priced
ITC	-0.0322	0.02837786	overpriced
TCS	0.0064	0.02412668	overpriced
Wipro	-0.0447	0.02451566	overpriced
Tech M	-0.0315	0.02631688	overpriced
Infosys	-0.0364	0.02607311	overpriced
Oracle	-0.0081	0.02487548	overpriced
HDFCBank	0.0371	0.02873641	under-priced
AXIS	0.0431	0.03271126	under-priced
SBI	0.0198	0.03494096	overpriced
KOTAK	0.0454	0.02981914	under-priced
ICICI	0.0458	0.03454538	under-priced

FINDINGS

According to Sharpe index model, the stocks mentioned below are the stocks which were found out after the analysis. TCS has the highest percentage of proportions followed by PGHH and Wipro. In the Sharpe index analysis, the average returns of the stocks are compared to that of market returns. Therefore, TCS shows possibility of high returns with comparatively less risk.

- TCS (59%)
- PGHH (40.5%)
- Wipro (0.5%)

From Markowitz portfolio, the stocks would be the ones that are mentioned below. In Markowitz method, the returns of the market are not taken as independent variable but they are calculated for their covariance and correlation with respect to other stocks. Therefore, highest percentage is held by PGHH for 24%.

- PGHH (24.33%),
- Oracle (12%),
- Dabur (10.6%),
- Nestle (9%) and
- TCS (8.7%)
- HDFC bank (8.1%)
- ITC (7.9%)
- Wipro (5.7%)
- KOTAK (3.12%)
- Britannia (3.1%)

- AXIS (2%)
- Infosys (1.7%)
- Tech M (1.6%)
- ICICI (0.69%)

From the CAPM analysis, the following stocks are shortlisted to be underpriced. Therefore, an investor can purchase the stocks which are underpriced. From the stocks that are mentioned below, PGHH is also one of the stocks that is being sold for lesser price. Markowitz analysis and Sharpe analysis indicates that the stock PGHH has been doing well.

Nestle - Under-priced

Britannia - Under-priced

PGHH - Under-priced

Dabur - Under-priced

HDFC Bank - Under-priced

AXIS - Under-priced

KOTAK - Under-priced

ICICI - Under-priced

CONCLUSION

- The following are the conclusions for the risk-return analysis done with the help of methods Markowitz portfolio theory, Sharpe index model and CAPM.
- Select stocks in Sharpe index model and CAPM are compared with the BSE sensex and the average returns are compared with respective industry indices.
- It is found that the stock PGHH has 24% proportion when calculated by Markowitz portfolio theory, the stock oracle is second with 12%, in third place it is Dabur with 10%. At fourth and fifth places nestle with 9% and TCS with 9% respectively.
- It is seen that PGHH from the FMCG sector 40.5% proportion when calculated by the Sharpe single index model and TCS holds 59% in the proportion. Therefore, if a portfolio is created then the above mentioned stocks should be added to the portfolio.
- From selected stocks, Nestle, Dabur, Britannia and PGHH from FMCG sector are underpriced. The stocks HDFC bank, Axis bank, Kotak and ICICI from banking sector are underpriced when calculated from CAPM. Since PGHH is underpriced, it is advisable to invest in that stock.

SUGGESTIONS

- From the analysis of all the 3 sectors, it is better to invest in the FMCG sector. TCS, PGHH, Dabur are the 3 stocks which are lucrative. In the IT sector, TCS seems like a best option as it was indicated in the Sharpe index model.
- From the risk averse perspective, it can be said that the stocks like TCS, PGHH, Dabur and Nestle should be considered to be on the portfolio. Since all the analysis is made from the point of view of a risk averse investor, the standard deviation (risk) is set to the minimum. Therefore keeping the risk on the low while the returns are variable.
- FMCG sector is considered as an evergreen sector since the consumer goods are essential goods to an extent. Therefore, there are 3 stocks from FMCG in top five stocks from the portfolio analysis through Markowitz portfolio theory.

An investor must keep in mind that market is subject to volatility. This volatility can be less when the market conditions are stable and high when the market conditions are unsteady. The data considered for this analysis is from the year 2015 January to 2020 February. Therefore the previous data was analyzed to find which stocks are fetching high returns.

Volatility can be caused by many factors. Inflation rates, interest rates, government policies, exchange rates, income of the population and international markets.

Even though there will be fluctuations in prices of few securities, an investor should thoroughly understand the risk and invest accordingly because of the fluctuating market. Investment should be made after thorough analysis of the security, company and economy.

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