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RELATIONSHIP BETWEEN NUMBER OF STOCKS IN EQUITY PORTFOLIO AND RETURN: AN EMPIRICAL STUDY

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ABSTRACT

One of the popular avenues for investors is the investment in capital market especially in equity if the investors are looking out for high returns. It is a fact that high return will be accompanied by high risk, risk and returns are inversely related. Compared to other avenues like real estate, infra which are illiquid assets, equity market has been generating a higher return and at the same time they are highly liquid. On the other hand, investment in bonds, fixed deposits which are less risky than equity investments yield lower returns. There is famous quote "Don't put all your eggs in one basket" which is also quite relevant for investors as well. It has been proved that spreading the investment fund across different sectors, or different companies in the same sector help in risk reduction. An interesting proposition is whether along- with risk reduction, spreading investment corpus across, will help in achieving reasonably higher return or not. This paper tries to understand the relationship between the number of stocks invested and the average return earned over a period of time by taking survey of individual investors.

KEYWORDS: Equity, Investment, Sectors, Return, Risk.

INTRODUCTION

Investment in equity falls under the bucket of financial assets unlike gold and real estate which form a part of non financial assets. Again under financial assets there are two sub categories, market linked products and fixed income products. Equity investments are market linked ones.

According to traditional theory, objective of diversification is to reduce risk of the portfolio of investments. As a popular saying goes "Don't put all your eggs in one basket", financial wisdom also caters to similar belief.

Taking the experience of 2008, when equity market faced a phenomenal crash of 39%, financial investment decisions had to be relooked into the same thought of traditionalists.

Had the investments been spread across other avenues , the situation would have been better in terms of average return earned. But again, every time the story of investment is different. Some of the investors had a varied experience, when they realised that they were earning only 27 % from balanced portfolio against 94 % from equities at the same period in 2009-10. But again there is a presence of hindsight bias.

In the real world, most equity investors would have panicked and withdrawn from the market in 2008-09, when equities had crashed by 39%. Those who held on during the difficult periods of 2008-09 would have made money, but as the crowding effect was prevalent in the form of emotions most of the investors preferred to withdraw from the capital market.

The objective of spreading the investments across various avenues is not only risk reduction but also earn reasonable return on these investments. Thus investing in risk free government schemes such as PPF, RBI bonds may not always serve the purpose. Equities especially growth oriented stocks can help in achieving the objective of higher return. In fact investors would have to set aside some of their objectives if they stick to only safe and risk free investment strategy.

REVIEW OF LITERATURE

Meir Statman (1987) in his paper titled "How many stocks make a diversified portfolio" is of the opinion that at least 30 stocks are required to avail the benefit of diversification as against Evans and Archer's widely popular 10 stocks. They were not in agreement with the theory proposed wherein it was stated that economic benefit of diversification gets finished when an individual investors has included 10th stock in his portfolio.

Hicham Benjelloun (2011) in their paper titled "The evolution of risk diversification" have come to conclusion that 40 to 50 stocks in a portfolio would help in optimum diversification. Newbould and Poon (1993) in their paper titled "The Minimum Number if Stocks needed for Diversification opined that forming a portfolio with 8 to 20 stocks is incorrect and

diversification benefit can be successfully achieved only when the number of stocks in more than 20.The authors used the market weights for their study.

Bloomfield, Leftwich, and Long (1977) tried to evaluate various portfolio selection methods which has a range from a naïve strategy where investments are equally weighted to sophisticated strategies where weightage of investments are assessed periodically.

As an investor, higher return with a lower risk is always the best preferred combination . But that possibility is quite remote, as risk and return go hand in hand. Investors thus are happy if reasonable return at an acceptable risk appetite is earned over a consistent period of time.

If an investor allocates his assets in a disciplined manner, he is likely to achieve this objective.

The following table shows the average return over a period of time.

YEAR	EQUITY	DEBT (GILT FUND)	CASH (LIQUID FUND)	GOLD	AVERAGE (25% EACH)
2007-08	20.37	7.39	7.42	27.53	15.68
2008-09	-39.07	9.67	8.53	23.61	0.68
2009-10	93.78	3.13	3.99	7.28	27.04
2010-11	8.60	5.32	6.30	25.76	11.50
2011-12	-5.14	6.74	9.04	34.22	11.22
2012-13	6.11	11.30	8.93	3.57	7.48
2013-14	21.59	3.93	9.05	-5.24	7.33
2014-15	49.57	17.26	8.72	-9.28	16.57
2015-16	-5.87	6.31	7.96	7.41	3.95
2016-17	27.22	12.63	6.73	-0.72	11.47
2017-18	12.39	3.33	6.53	5.24	6.87

Source: ET Bureau Aug 29, 2018

As can be viewed from the table, investment in equity has rewarded the maximum return.

There are certain parameters which influences the investors while opting for avenues of investment. Investors' age has a major role to play in investment decision making. 100 deducted from age is the normal rule for investment in equity stock. Young investors comprising of the millennials and gen Z can go for higher proportion of equity in their investment portfolio. Reasons are smaller amount of investment, longer period of investment horizon and lesser responsibility in terms of family and children.

But many a times, a stock market veteran with vast experience in equity investment might have a higher risk appetite than a millennial who is not in a position to take higher risk.

Willingness to take risk accompanied by ability to take risk with the steady income streams also play a major role in investors' decisions of choice amongst various avenues. Investors approaching retirement may not be having the same ability as they would have had in their middle age.

If investment horizon is more than three years, the investment corpus could comprise only equities. If the period of investment plan is less than three years, then the investors need to strike a balance between debt and equity.

But again, even if the objective of investment is child's education which is far off for a young investor, the entire allocation of investment corpus should not be put in equity market.

The investors goal is to meet the objective in a comfortable manner, getting reasonable returns and not highest returns.

Now the question arises, within equity, there is a need of spreading the investments across sectors. Is there a thumb rule about how many stocks to be picked and invested in a particular portfolio? Is there any relationship between number of stocks and return earned in capital market? There are investors who have the tendency to keep on adding stocks to their portfolio of investments. According to Harry Markowitz, the father of Modern Portfolio Management, to achieve the diversification benefit of risk reduction, maximum number of stocks should ideally range between15 to 20 stocks across various sectors. Risk in investment is decomposed into unsystematic and systematic component. Systematic risk is the market risk which is non diversifiable as all the stocks in the portfolio face similar market risk.
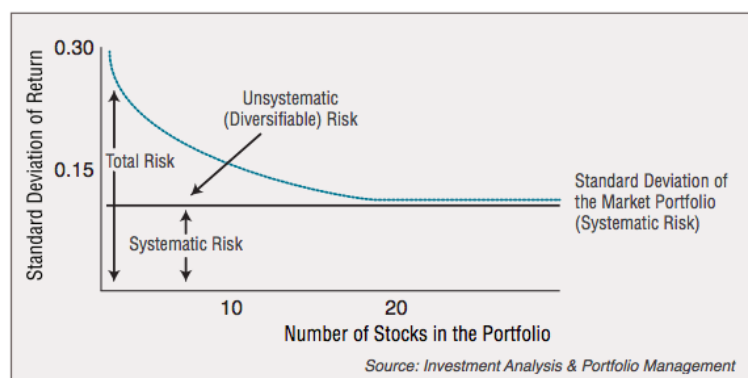
If there are more stocks in a portfolio of investment, there is rise in diversification, which is believed to reduce the risk of the portfolio. As all the stocks in portfolio may not under

perform at the same time, thus the likelihood of facing reduced value in overall performance of the portfolio is lessened.

In Indian stock market, there are 18 broad categories of sectors. Thus one from each sector makes number of stocks in a portfolio to be 18. If investors are apprehensive about some sectors, they still can choose 15 from across various sectors. But Indian capital market is not as liquid compared to its counterparts across the globe. Thus investors with large corpus pick more than one stock from each sector.

Investors follow different methods for diversification. Some of them try to link the number to the fund kept for the portfolio. Few investors opt for different sectors of their choice. The study is still for arriving at ideal number of stocks in a portfolio of investments. There is disagreement amongst the investors with varied interests for the optimum number.

However, there are certain established rules of diversification, which act as guidelines to solve the puzzle of ideal number of stocks in the portfolio.

Source: "Risk, Market Sensitivity and Diversification," Financial Analysts Journal, January/February 1972, pp. 74-79

If the number of stocks are very less, then the investor is facing a higher risk of stock not performing as well as expected. But again if the number of stock is very large , the investor might not be in a position to enjoy the above normal performance of one of the stock because of the spread.

The graph shown above takes only the diversifiable risk or the unsystematic risk on the vertical axis and number of stocks on the horizontal axis. As is clear from the graph, if investors resort to over diversification, by adding more and more stocks in his portfolio, risk reduction might not happen after reaching a certain level. In fact, the investor would find it difficult and complicated to manage and track a large number of stocks.

The study of investors who are actively involved in capital market was conducted to understand the relationship between the number of stocks held at a point of time and the returns earned on an average.

Sample Size: 90 individual investors in Mumbai

Sample Design: Purposive

Research Design: Descriptive Design

Data Collection Method: Primary Data using Questionnaire

Hypothesis

H0: Number of Stock in equity portfolio and Average Return earned are independent of each other.

H1: Number of Stock in equity portfolio and Average Return earned are not independent of each other.

Chi square test of independence as a tool was used for the above objective.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Average Earnings p.a * No of Companies	90	100.0%	0	0.0%	90	100.0%

Average Earnings p.a * No of Companies Crosstabulation						
Count						
		No of Companies				Total
		Less than 5	5 - 9	10 - 15	More than 15	
Average Earnings p.a	Less than 8 %	22	3	1	0	26
	8% - 11 %	17	7	2	1	27
	12 % - 16 %	6	12	6	0	24
	17 % - 21 %	2	3	1	4	10
	22 % - 26 %	0	0	0	1	1
	Above 26 %	0	1	1	0	2
Total		47	26	11	6	90

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	61.141[a]	15	.000
Likelihood Ratio	47.646	15	.000
Linear-by-Linear Association	26.910	1	.000
N of Valid Cases	90		
a. 17 cells (70.8%) have expected count less than 5. The minimum expected count is .07.			

Analysis: As is clearly evident that out of 6 of the respondents, four of them have had an average earnings between 17 % to 21 %. Although the sample size being very small, it can be gauged that number of stocks if chosen after indepth study and with good fundamentals can yield higher returns. Similarly, out of 11 investors whose portfolio comprises of stocks between 10 – 15, 6 of them have been enjoying average return of 12 % to 16 %. Thus diversification helps in not only risk reduction as traditional theorists propound, it also results in reasonably higher returns.

From the chi square statistic, it is very clear that null hypothesis is rejected as the p value is less than 5 %, the default significance level at 15 degrees of freedom. It can be interpreted that there is a significant difference between observed frequencies and expected frequencies. It can thus be concluded that the two variables, that is, the number of stocks in a portfolio and the average return earned are not independent. A relationship between the two can be discerned to be prevalent.

CONCLUSION

An attempt was made to understand the existence of relationship between the number of stocks in a portfolio and the average return earned. From the study, it can be perceived that number of stocks in an investment corpus does matter, the question still remains unanswered about the optimal number.

Most of the time risk reduction is believed to be primary objective for going in for diversification. But return earned also to a great extent relies on the number of stock held in the portfolio. A relationship between the two has been established through this study.

Scope for further study

To have a further clarification about how many stocks to own in the portfolio, parameters like age, objectives of investment can also be included in the study.

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