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A Study on BSE Small – Cap and Gold Asset Allocation in Constructing Portfolio

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Abstract

"A study on BSE Small – Cap and Gold asset allocation in constructing Portfolio" has been undertaken to get knowledge about different investment avenues available for individuals and how asset allocation will impact on the portfolio construction.

In this study, I took BSE – SMALL CAP, GOLD as different indices for investment and calculated returns for each year from 2004 to 2022 for all asset class. All asset class performance is not identical. If one asset will perform better in a specific year, the same asset will not be performing in the next consecutive years. And also, I took 2 strategies as example for investment i.e. If Rs. 100 Invested in each asset class in 2003 and continue as it is till the year ending 2022 and If Rs. 100 Invested in all asset class in 2003 and balancing the returns at the end of every year. The second strategy generates more income than first one and this study helps to know the importance of asset allocation in portfolio construction.

Keywords: Asset Allocation, BSE – SMALL CAP, GOLD, Portfolio Construction.

Introduction to Asset Allocation and Asset Class

Asset allocation is the process of distributing investments among various assets, including stocks, bonds, and cash. The selection of asset allocation is a private one. Depending on how longer time period a individual have to invest for and how much risk can individual ready to accept, he will have different allocations that work best at different stages of life.

While building a portfolio, asset allocation is frequently the first or earliest strategic decision. Because it holds that position, it is widely accepted as important and meriting careful attention.

By allocating a portfolio's assets in accordance with an individual's goals, risk tolerance, and time for investment horizon, asset allocation is a type of investment strategy that aims to strike a balance between risk and reward. Equities, fixed-income investments, real estate, gold, and cash and equivalents are the major asset classes. Due to their varying levels of risk and return, each will perform differently over time.

Objectives of the study:

- To know the importance of asset allocation in portfolio.
- To make comparison with the different investment options available for the investor.
- To study the performance of different asset classes.
- To ascertain the risk and returns regarding different asset classes.

Scope of the Study:

- It covers the 20 years data of 6 different asset classes.
- The Selected asset classes are BSE SMALL CAP, GOLD,
- To evaluate each asset class, returns of asset class are calculated over a period of 20 years.
- By diversifying the investment into different asset class leads to minimise the risk.

Research Methodology:

Study on asset allocation is conducted by collecting the secondary data through various authentic websites. Based on different objectives of study quantitative method (Exploratory research design) is to be used. Exploratory research design is utilised to study the cause and effect of changes in different variables.

Limitations of the Study:

- This study is a very generic one not a customised study.
- The cyclicality of each asset class is not able to predict.
- It is difficult to allocate the weightage to each asset class in portfolio.
- Difficult to find the Correct time period for investment and profit booking.

Data Collection

Data is collected from Secondary sources to study the importance of asset allocation in portfolio construction. Data considered for the study are collected from the BSE index Indian website, Nasdaq index US market, investing.com, world gold council website. Selected asset classes are BSE Small-Cap, Gold. Tool used for analysis is yearly returns, if an investor invests Rs.100 in each asset class in 2003, its value as on 2022 and if he re-balance his returns at equal weightage on every year, its value as on 2022. The study is only for generic purpose so I allocated the investment amount equally to all asset class. But it is hard possible when compared an individual portfolio.

Returns

A return is also known as a financial return, in its simplest terms, is the money made or lost on an investment over some period of time. A return is the variation in price of an asset or investment over period of time, which may be represented in the form of price change or percentage change. A positive return represents a profit, while negative returns mark a loss.

$$\text{Return} = \frac{\text{Today's price} - \text{Yesterday's price} \times 100}{\text{Yesterday's price}}$$

BSE SMALL – CAP

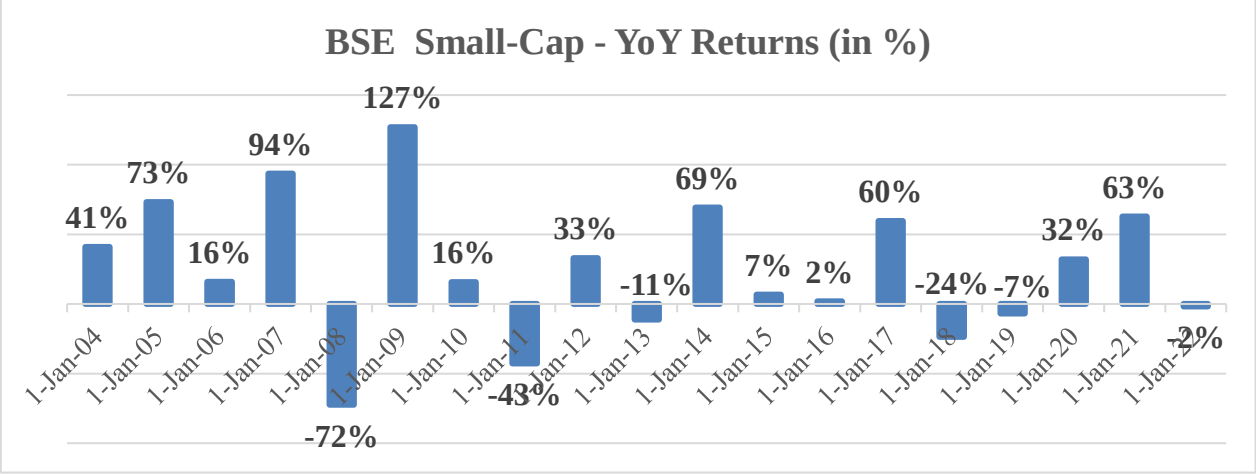
Table 1.1: Table shows the returns and current value of an investment in BSE SMALL – CAP index.

Date	31-Dec-03	31-Dec-04	31-Dec-05	31-Dec-06	31-Dec-07	31-Dec-08	31-Dec-09
BSE Small Cap index	2,433	3,432	5,943	6,892	13,348	3,683	8,358
Returns (in %)		41%	73%	16%	94%	-72%	127%
Amount (in Rs.)	100	141	244	283	549	151	344

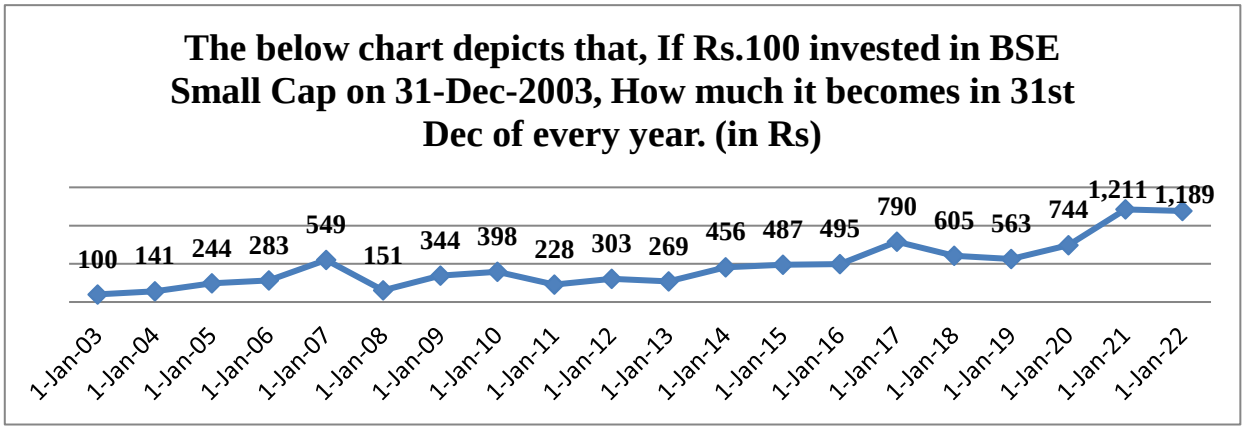
Date	31-Dec-10	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15	31-Dec-16
BSE Small Cap index	9,670	5,550	7,380	6,551	11,087	11,837	12,046
Returns (in %)	16%	-43%	33%	-11%	69%	7%	2%
Amount (in Rs.)	398	228	303	269	456	487	495

Date	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21	31-Dec-22
BSE Small Cap index	19,231	14,707	13,699	18,098	29,458	28,927
Returns (in %)	60%	-24%	-7%	32%	63%	-2%
Amount (in Rs.)	790	605	563	744	1,211	1,189

Graph 1.1: Graph shows the returns of BSE SMALL - CAP index (in %) from 31-Dec-2004 to 31-Dec-2022.



Graph 1.2: Graph shows the returns on investment of BSE SMALL - CAP index (in Rs.) from 31-Dec-2003 to 31-Dec-2022.



Interpretation:

With reference to above table and graphs, the BSE Small – Cap index registered the higher returns for year ended 31-Dec-2009 with 127% and registered lower returns for the year ended 31.12.2008 with -72%. In the year 2008, 2011, 2013, 2018, 2019 and 2022 it registered the negative returns. Other than negative years it registered positive returns. If an investor invests Rs.100 in BSE Small – Cap index in 31-Dec-2003, its value as on 31-Dec-2022 will be Rs.1,189.

Gold

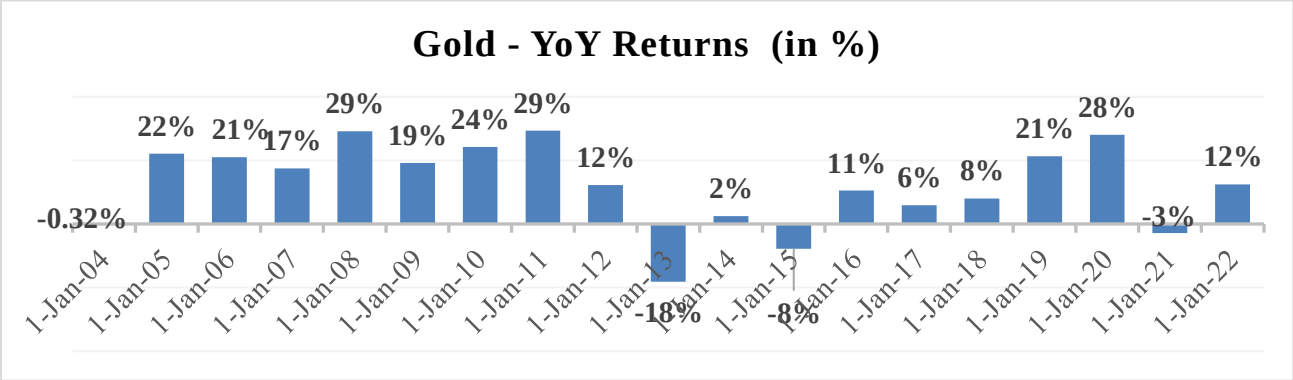
Table 1.2: Table shows the returns and current value of an investment in Gold.

Date	31-Dec-03	31-Dec-04	31-Dec-05	31-Dec-06	31-Dec-07	31-Dec-08	31-Dec-09
Gold Price (Per gm. Rs)	611	609	743	899	1,057	1,365	1,627
Gold Returns (in %)		-0.32%	22%	21%	17%	29%	19%
Gold Returns (in Rs)	100	99.68	122	147	173	224	266

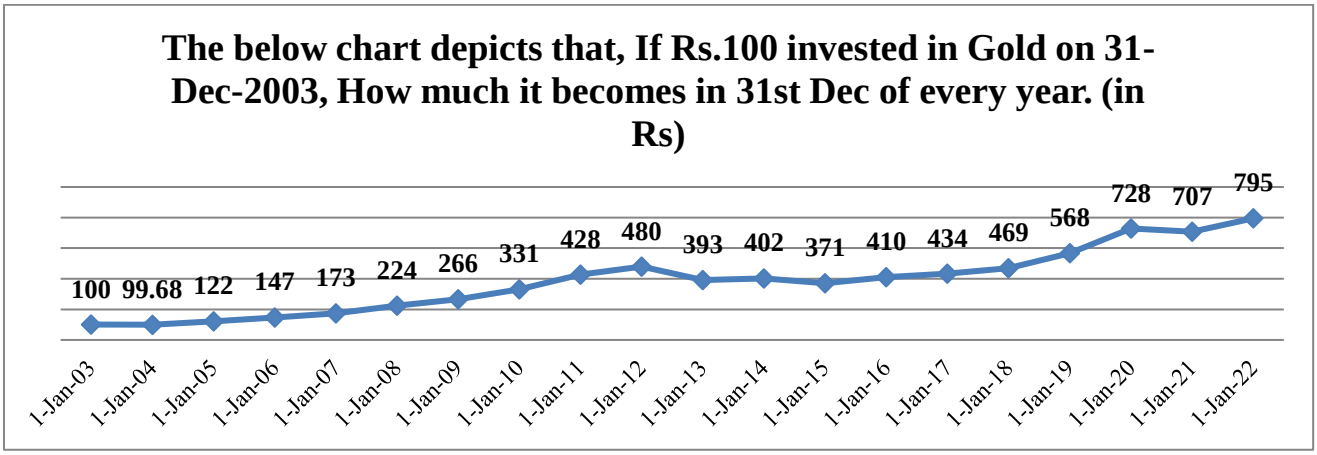
Date	31-Dec-10	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15	31-Dec-16
Gold Price (Per gm.)	2,020	2,612	2,931	2,398	2,456	2,264	2,502
Gold Returns (in %)	24%	29%	12%	-18%	2%	-8%	11%
Gold Returns (in Rs)	331	428	480	393	402	371	410

Date	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21	31-Dec-22
Gold Price (Per gm.)	2,650	2,862	3,471	4,443	4,316	4,852
Gold Returns (in %)	6%	8%	21%	28%	-3%	12%
Gold Returns (in Rs)	434	469	568	728	707	795

Graph 1.3: Graph shows the returns on Gold (in %) from 31-Dec-2004 to 31-Dec-2022.



Graph 1.4: Graph shows the returns on investments in Gold (in Rs) from 31-Dec- 2003 to 31-Dec-2022.



Interpretation:

With reference to above table and graphs, the Gold registered the higher returns for year ended 31-Dec-2008 with 29.16% and registered lower returns for the year ended 31.12.2013 with -18.18%. In the year 2004, 2013, 2015, and 2021 it registered the negative returns. Apart from 2004, 2013, 2015, and 2021 it registered positive returns for all the remaining years. If an investor invest Rs.100 in Gold in 31-Dec-2003, its value as on 31-Dec-2022 will be Rs.795.

Portfolio construction strategy.

Since there is a cyclicality in annual performance of each asset class, below two strategies have been built to understand the importance of the asset allocation.

1. Portfolio with equal allocation to all six asset classes and the same is getting rebalanced every year (31st Dec) again with equal allocation.
2. Portfolio with equal allocation to all six asset classes and The same is held as it is without any yearly rebalancing till 31st Dec-2022.

If an investor invests Rs.100 in each asset class in 31.12.2003, the current value as on 31.12.2022 will be Rs.5,035. If he rebalances on every year with equal weightage to all asset class the current value as on 31.12.2002 will be Rs.6,963.

Table 1.3: Table shows the year end returns if an investor invests one time throughout time period or rebalance their portfolio with equal weightage.

Date	One Time Investment (In Rs)	Re balancing Every Year (In Rs)	Date	One Time Investment (In Rs)	Re balancing Every Year (In Rs)
31-Dec-03	600	600	**31-Dec-13**	1,717	2,332
31-Dec-04	687	687	**31-Dec-14**	2,222	3,027
31-Dec-05	932	913	**31-Dec-15**	2,257	3,096
31-Dec-06	1,149	1,115	**31-Dec-16**	2,411	3,325
31-Dec-07	1,716	1,536	**31-Dec-17**	3,139	4,194
31-Dec-08	897	1,078	**31-Dec-18**	2,947	4,095
31-Dec-09	1,433	1,720	**31-Dec-19**	3,204	4,536

31-Dec-10	1,665	1,970	**31-Dec-20**	3,881	5,446
31-Dec-11	1,427	1,819	**31-Dec-21**	4,970	6,846
31-Dec-12	1,741	2,230	**31-Dec-22**	5,035	6,963

Graph 1.5: Graph shows that the year-end returns, if an investor invest one time throughout the period and rebalancing his portfolio on equal weightage on every year.

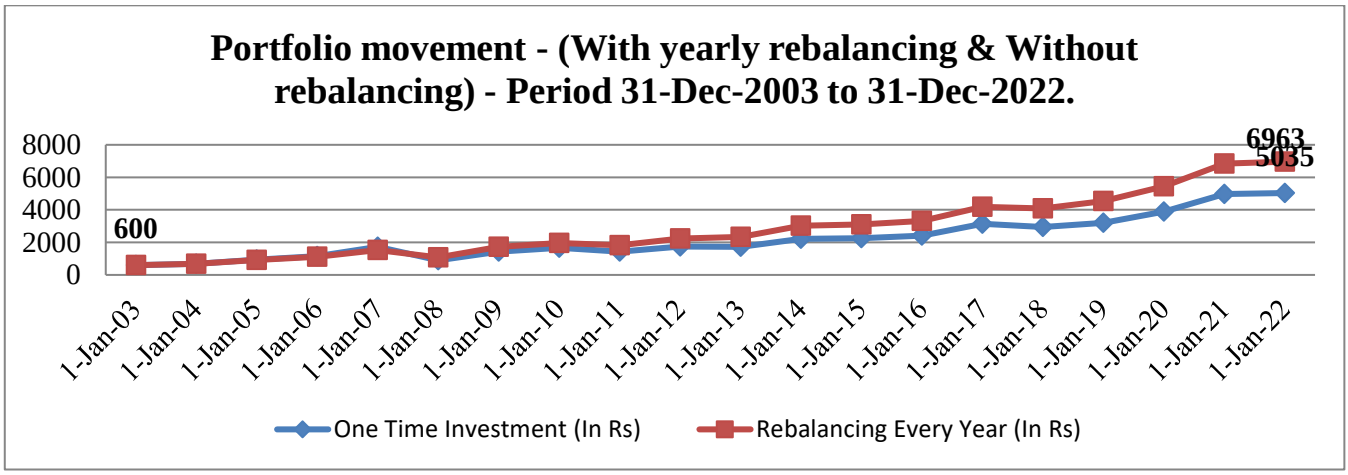


Table 1.4: Table showing YOY Return – Portfolio with yearly rebalancing and without rebalancing.

Date	Without Rebalancing (in %)	With Rebalancing (in %)	Date	Without Rebalancing (in %)	With Rebalancing (in %)
31-Dec-04	15%	15%	**31-Dec-14**	29%	30%
31-Dec-05	36%	33%	**31-Dec-15**	2%	2%
31-Dec-06	23%	22%	**31-Dec-16**	7%	7%
31-Dec-07	49%	38%	**31-Dec-17**	30%	26%
31-Dec-08	-48%	-30%	**31-Dec-18**	-6%	-2%
31-Dec-09	60%	60%	**31-Dec-19**	9%	11%
31-Dec-10	16%	15%	**31-Dec-20**	21%	20%
31-Dec-11	-14%	-8%	**31-Dec-21**	28%	26%
31-Dec-12	22%	23%	**31-Dec-22**	1%	2%
31-Dec-13	-1%	5%			

Graph 1.6: Graph Shows YOY Return – Portfolio with yearly rebalancing and without rebalancing.

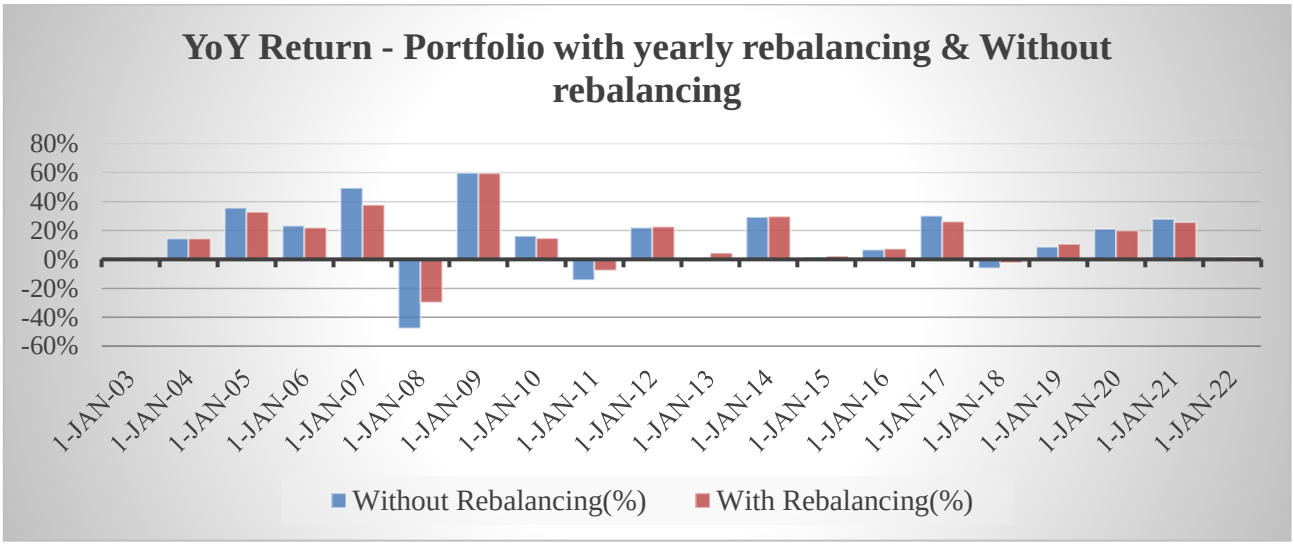
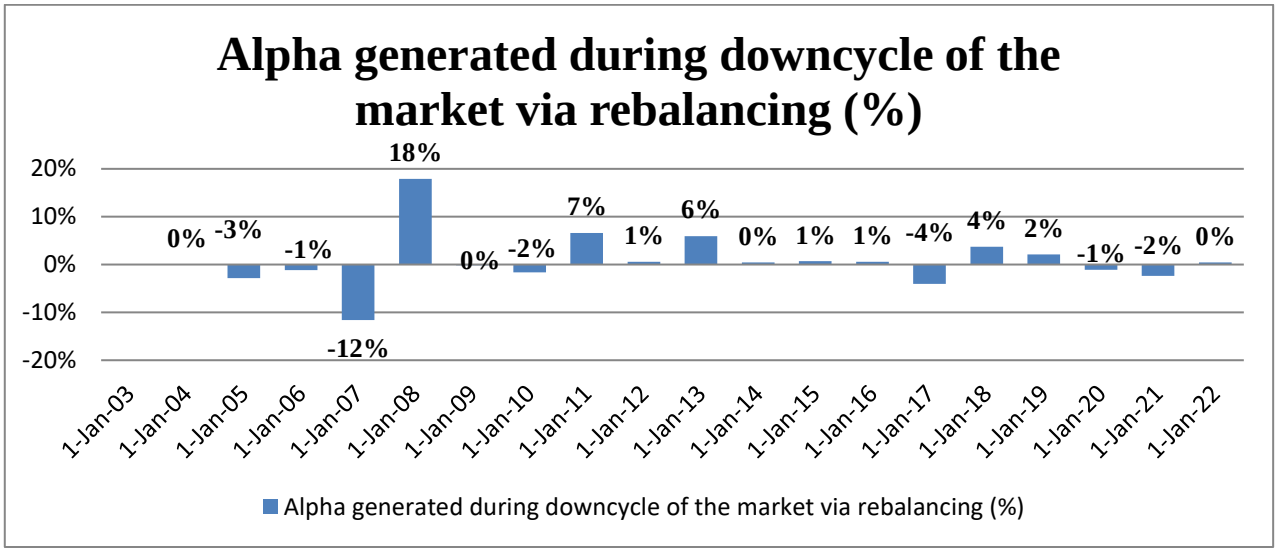


Table 1.5: Table showing Alpha generated during down cycle of the market via rebalancing from 31-Dec-2004 to 31-Dec-2022.

Date	Alpha Generated	Date	Alpha Generated
31-Dec-04	0%	**31-Dec-14**	0%
31-Dec-05	-3%	**31-Dec-15**	1%
31-Dec-06	-1%	**31-Dec-16**	1%
31-Dec-07	-12%	**31-Dec-17**	-4%
31-Dec-08	18%	**31-Dec-18**	4%
31-Dec-09	0%	**31-Dec-19**	2%
31-Dec-10	-2%	**31-Dec-20**	-1%
31-Dec-11	7%	**31-Dec-21**	-2%
31-Dec-12	1%	**31-Dec-22**	0%
31-Dec-13	6%		

Graph 1.7: Graph Shows the Alpha generated during down cycle of the market via rebalancing from 31-Dec-2004 to 31-Dec-2022.



The analysis evaluates the returns of the Gold and BSE Small-Cap indexes over a 20-year period. The summary as follows

Asset Class	Top Performance (No of Years)	Worst Performance (No of Years)	No of times Negative Returns	Highest Returns in any year	Lowest Returns in any year
BSE Small-Cap	8	5	6	126.92%	-72.41%
Gold	5	6	4	29.30%	-18.18%

Asset Class	Absolute Returns	Annualized return	Median Returns	Standard Deviation
BSE Small-Cap	1189%	13.91%	15.97%	0.49
Gold	795%	11.52%	12.42%	0.13

Portfolio Strategy	Highest Returns in any particular year	Lowest returns in any particular year	Median Return	Absolute Returns	Annualized return	No of times Negative Returns
With Rebalancing	60%	-30%	14.57%	1161%	14%	3
Without Rebalancing	60%	-48%	16.19%	839%	12%	4

Findings

- When compared to other index and asset class, BSE Small - Cap index has been performed well over a period of time.
- When indices have been out performed in market, the Gold performed well with a more than 25% of return in consecutive years.

- Despite equal weight portfolio with yearly rebalancing underperforms during uptrend of the market, the same did not impact its long-term return mainly due to alpha generated during downtrend of the market.
- With regards to the asset allocation at inception (year 2003) & at year 2022 – Asset allocation of the yearly rebalanced portfolio remains same at inception as well as year 2022 and it depicts superior risk management. However, asset allocation of the portfolio without rebalancing is fully skewed towards equity and overall, portfolio risk / exposure to unknown volatility is significantly high.

Conclusion

As per above findings following are my conclusion regarding the importance of asset allocation in portfolio construction.

- Since it is difficult to predict the time for up cycle / down cycle of each asset class, it is better to rebalance yearly once at year end without applying any human judgement irrespective of performance / positive or negative sentiment of any asset class.
- Also, the best performing asset class of any year has rarely continued the same incremental performance on consecutive years (with some exception).
- As per the findings depicted above, it is prudent to allocate the capital across asset class with equal weight and rebalance the same every year at year end. As per the findings, this strategy has given 14% annualized return and 11X absolute return and it is superior strategy than "invest for long term & forget".

References

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