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How to Mitigate Volatility?

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Executive Summary

Investors across the world and across markets have realized the need for a comprehensive strategy which would help in mitigating the impact of volatility. Though, regulators on their part are trying their due to bring it down, an investors one must take essential precautions to ensure ones portfolio is insulated (as far as possible) from volatility shocks. The paper explains the various strategies which an individual and a business can make for the same. It emphasizes on the importance of asset allocation- investing across asset classes (thereby not limiting the exposure to one of them), diversification (across sectors and size which offer different risk return pay-offs). Finally, the paper deals with the various risk management strategies that an investor can make even without knowing much about the same. It is important to realize that the causes of volatility cannot be determined easily. Hence one should use a combination of different strategies to deal with it.

Financial markets across the globe are a different arena today. Development of financial markets has brought new opportunities and challenges for each one of the participant. One of the major challenges being experienced by all the participants is the increased volatility in the various financial markets.

Financial markets across the asset classes have seen heightened volatility. It is to be realized that all the happenings in the financial markets are caused by one of the participants- So is volatility. Thus, even volatility, or lack of it is the result of the actions of one of the four pillars or participants which constitute any financial market - Investors, Issuers, Intermediaries and Regulator.

What is Volatility and by whom is it to be managed?

Volatility is a reflection of risk, which measures the degree of change and the speed of change in value of assets. Thus, in affect it measures the sensitivity of returns to the various factors by which it is impacted. Though, in the academic circle consensus is lacking on what is the best measure of volatility, usually Standard Deviation is considered the apt measure. Each market participant can play a role in mitigating risk, but since the scope of the paper is limited to Investors I discuss the various strategies that can be adopted by the investors in mitigating the volatility they are exposed to.

Why is Volatility undesirable?

Increased volatility brings down the investor confidence in financial markets. This can either lead to the prevalence of Income Effect over Substitution Effect or investments in other physical asset (where the risk to reward ratio is not comparable to ones being offered in financial assets). This is highlighted in the latest RBI Annual Report which gives the break-up of the Financial Savings of the Household sector. As per the report only 6.3% of Household savings goes to Shares and Debentures (Even in that, 4.8% comes through Mutual Funds). This has been the case ever since the early 1990s, when the Harshad Mehta scam devastated investors confidence on the financial system. A look at similar figures show that the proportion of savings invested in shares and debentures

were much higher in the 1980s till the investor confidence was broken. The long term implication of this could be Stock markets failing in their purpose- facilitate savings and channelize funds from savers to investors. Thus volatility impairs the smooth functioning of the financial markets and affect economic growth. It makes a financial market more institutionalized as Individual investors due to their lower corpus, usually have lower risk taking ability. Economist, academicians and the financial press have highlighted that if financial markets are to develop, it has to be inclusive. In a country like ours, the *Average Indian* has to invest, as he has to be the part the growth story which the Corporate India is experiencing.

The bigger question- How to do it?

For the individual investor, the most important stride towards mitigating volatility is to believe that an individual can manage assets. Financial markets sure are volatile, but the *professional money managers* managing them are also individuals. The following are the different strategies that an individual (including a business) can adopt to mitigate the impact of volatility on his/her investments:

1. Setting Objectives:

However theoretical it may sound, setting objectives gives one a direction to move towards. It helps frame a broad framework within which one moves. The objectives set may be on the following parameter:

- What is the expected return from the investment?
- What is the time frame for which one is willing to invest?
- What is the risk level/tolerance level?

Setting objectives help in framing strategies. For instance, Institutional investors like mutual funds vary among themselves on most of these parameters, hence the difference in investment strategy. For instance, the expected return of a Growth fund would be higher than that of a Value fund; hence both would have different strategies to achieve them. Similarly, a highly risk taking individual would have greater return expectation

than that of one with lower appetite for risk. Each of the above questions is inter-related and a difference in any one can impact the other.

2. Asset allocation:

Investors could classify their investments into risk free and risky assets. Risk free in most countries is the T-bills. However, individuals cannot invest in t-bills though the alternative route of money market funds can offer similar risk return payoffs.

All investments other than t-bills are considered risky, though the risk may vary across asset classes. The Equity markets have seen high volatility in the last few years (especially in the Indian market). The bond market gives relatively stable (and low) returns. However, Indian bond market today is not developed enough (is largely an institution driven market); hence the participation of individual investor is very low. However, for an investor alternatives offering similar risk-return matrix are available. The most easily accessible proxy among those being, the Fixed Deposit schemes available with Banks. Though, the risk and return of FD scheme are not strictly comparable to that of Bond market, it comes closest to the Bond market. Other opportunities with similar features could be Fixed Income Mutual Funds available in the markets.

However, asset allocation is not limited to Stocks and Bonds. It's a misfortune that most investors (at least the individual ones) are aware only of the dynamics of these two asset classes.

- Alternative Investments, of late have got better response in the western markets. The various sub classification under Alternative Investments are Commodities, Hedge Funds, Private Equity and Real Estate. Many of the above are affordable/ accessible only to a few or none of the investors in the Indian markets.
- Commodities have always been a hard nut to crack; rather, they have been positioned so. However, investors in commodities market have reaped the potential over the last few years (especially post 2001). As highlighted by Jim Rogers in his book Hot Commodities, the next decade could be of commodities.

This is so because of the growth in countries like China and India which is backed by demand for agricultural (growing population and changing demographics have helped increase the demand) and metals and energy (which are important raw materials for the booming industrial production).

- Hedge Funds have historically seen India as an investment arena instead of investor base. Since these vehicles are legally not allowed in India, most investors are not exposed to them. However, a marked development has been the Monetary Policy 2007-2008 announced on April 24 by RBI. As per this, the present limit for individuals for any permitted current or capital account foreign investment has been increased from \$50,000 to \$100,000 per financial year. Thus, with *retailization* of Hedge funds in the west, they have become largely accessible to Indian investors, especially the HNIs and Institutional investors (subject to regulation).
- Real Estate also offers an interesting alternative to investors. This often is by investors who have a home (in which they live) and the second one is for resale. This trend has been positive in India as with the property prices surging northwards, many investors are looking at second or even third home purely from the investment perspective. With real estate markets following a cycle, it makes sense to invest a part of portfolio to cash in during good times.

Research has highlighted that asset allocation has been the determining factor for changes in portfolio variance¹. Any marginal investment return, the correlation of which to the existing portfolio is less than 1 reduces risk. Thus one can decide within the objectives (of return and risk) set how much to trade-off between return and risk. The impact of volatility in one market is minimized as the investments span across asset classes which often have low co-relation. The process doesn't end with asset allocation. It is important to re-align one's investment when the risk-return matrixes change.

As highlighted above, because of the lack of awareness or due to the non-development of certain markets not all investors can invest in all markets. However, an interesting aspect of asset allocation (and a more practical aspect) is that one doesn't really have to move

across asset classes to get portfolio exposure to each one of them. Financial markets, especially the equity market in our country has developed to such an extent that equity themselves can give an individual exposure to different asset classes. For instance, a stock in IT Sector or Banking sector can give exposure to currency markets. Similarly, an exposure to Oil sector or Sugar sector can give exposure to specific commodities. An investment in real estate companies can give exposure to Real Estate. Though, it is true that the risk and return would not be the same as that direct exposure, but for an individual it is an opportunity when these direct investments are either unclear or not accessible.

3. Diversification

Once the available funds are allocated to different asset classes, it is important to diversify each allocation as the characteristics of each sub assets vary. Thus, in Equity markets one can look at diversifying across sectors or across size (Large cap, Mid cap and Small cap). The risk and return of each of these vary and hence it is important to make a trade-off between required return and risk appetite.

- Sectoral allocation: The returns of certain sectors do not move in the same magnitude as that of other sectors. If the correlation between two sectors is less than 1, then having stocks from both the sectors would bring down the overall risk.
- Size allocation: Often small size firms (Small cap and mid cap) have higher growth potential than large caps. In investment terminology they are called Growth stocks and Value stocks. It is important to have diversified across sizes and growth potential.

4. Invest for a long period

Volatility is one of the most researched topics in financial markets. There is not much consensus on what causes volatility, but academicians generally agree that in the short run asset prices (especially stock prices) stray away from fundamentals (intrinsic value).

However, if there is mis-pricing our markets are developed enough that arbitrageurs capitalize on this and the asset comes back to its fundamental value in the long run.

Intermediaries (brokerage houses) and Institutional investors often impact stock prices in the short run. The best way to deal with such happenings is to invest for a longer duration. The markets may be manipulated for a trading session, day, week or even a month. But in the long run arbitrageurs would come into play and the overvalued stocks would fall and vice versa. Appendix 1 highlights that though short term (daily) volatility has increased over the past few years, in the long run fundamentals have taken their course.

5. Risk Management

It is understandable that sometimes even the best diversified portfolios get volatile in the short term. The investor is concerned with the sensitivity of the return as he loses his/her peace of mind is affected due to volatility. To minimize the risk arising there from one can lock in values in the derivative market and sail through the downturn smoothly. Looking at derivatives markets closely, one would realize that the essence of derivatives market is to change the risk-return pay-off depending on the changing market portfolio. Thus, by hedging one is reducing risk, but at the same time foregoing return (the options premium, margin, transaction cost etc).

It may so happen that the entire market is facing short term decline in which case, he/she can hedge the entire portfolio. To determine the optimal hedge ratio of a portfolio, one has to take into account its beta. A beta of 2 would signify that the portfolio is twice as sensitive as the index to the risk. Thus a 1% fall in index would lead to 2% fall in the portfolio (and vice versa). In such cases, the investor would have to enter into two contracts on index (long index) as the sensitivity is twice that of index. If the portfolio goes down, the returns of index future contracts would go up. The similar strategy can be used if a particular stock and not the entire index is volatile. In such a case, the investor would be using the beta of the stock and deciding on the optimal hedge ratio.

Hedging can also be done using Options. In a falling market, the investor could go long into put options to lock in a price. The hedge ratio would be computed the same way as it was done in futures. Similarly, one can also go long on individual stocks put options when the stock is on the declining phase. If the stock goes down the option would be in-the-money.

It has to be remembered that in Indian market one can deal in F&O market only in stocks which form part of index. A fundamental difference between futures and options in a hedging strategy is that a future would neutralize the risk and the pay-off would be linear. The loss in the underlying would be made good by the profits in the futures market. However, Options act as an insurance securing a price for the asset and in addition allowing the investor to benefit from the favorable movements.

Conclusion

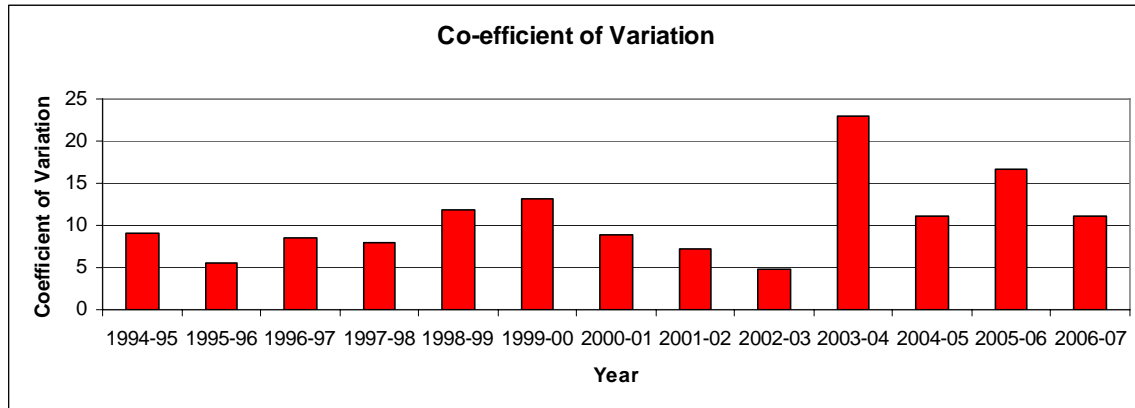
Volatility by its very nature can affect investor financially and emotionally. Because of different causes of volatility it is important to use different means to mitigate it. Allocating assets to different classes and diversifying within each of them can lead to spreading of risk to a great extent. Investing for a long term also helps to minimize the impact as over the long run, fundamentals would rule. However, the above would only help in mitigating or avoiding the unsystematic risk as the systematic risk would still exist. This explains the reason for a well diversified portfolio like index to become volatile during certain periods. To deal with these, one has to enter the horizon of risk management and use the hedging strategies using futures and options.

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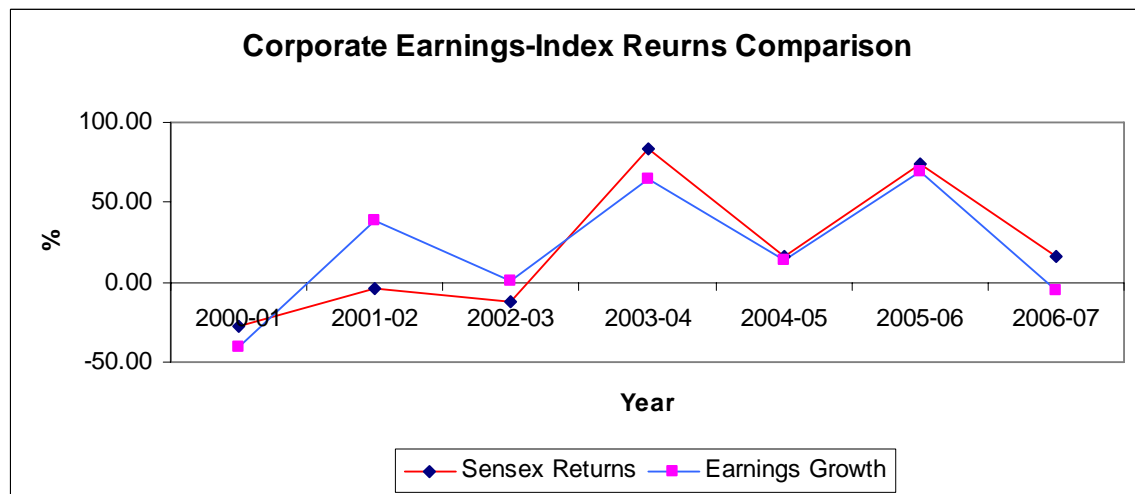
Annexure

Annexure 1



Source: RBI Annual Report

The chart highlights that Co-efficient of variation (Std Deviation/Avg Returns) as a measure of volatility has increased during the 2003-04 to 2006-07 period.



Source: RBI Annual Report, Capitaline

However, the ratio of Std Deviation as a percentage of Historical returns might not be giving a true picture. That is because the market is growing at a pace never seen before and as is highlighted by the chart immediately above it is backed by growth in fundamentals (earnings).

SUMMARY OUTPUT

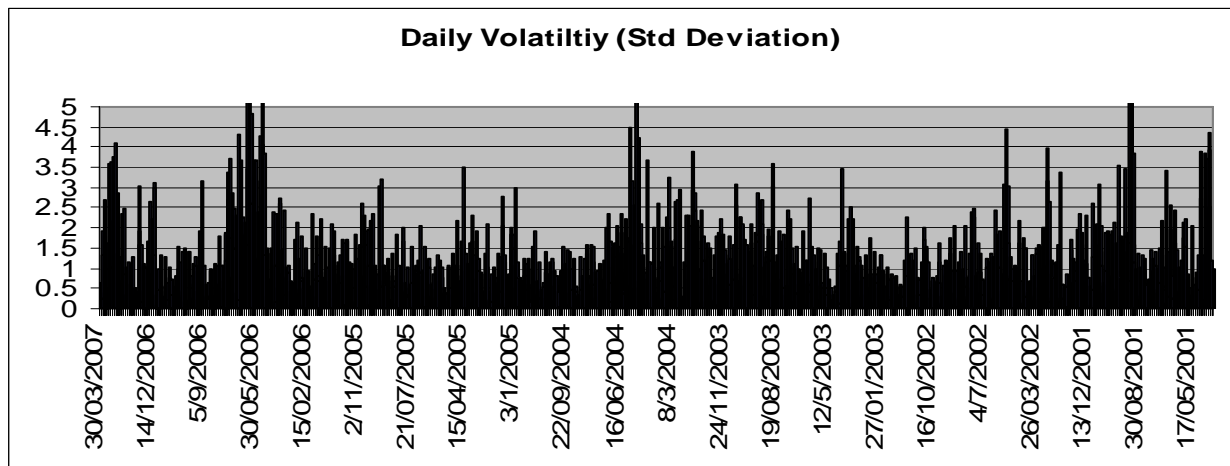
Regression Statistics	
Multiple R	0.857
R Square	0.735
Adjusted R Square	0.682
Standard Error	23.964
Observations	7

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	7957.58	7957.58	13.856	0.014
Residual	5	2871.48	574.30		
Total	6	10829.06			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	2.29	10.33	0.22	0.83	-24.26	28.84	-24.26	28.84
X Variable 1	0.92	0.25	3.72	0.01	0.28	1.55	0.28	1.55

The regression analysis shows the independent variable (Sensex Returns) and the dependent variable (Corporate Earnings) have a positive relationship and the model has an adjusted R^2 of .682.



Source: Capitaline

The daily stock movements have been volatile much more what it used to be. One questions whether the fundamentals of the corporate change so much on a day to day basis hence the obvious reasoning is the impact of *other Factors*.