

# Why should you think long term?

“While thinking of equity investments, think long term” - goes oft-repeated words of wisdom. Is it true only when the markets touch these unprecedented heights or should we keep this in mind even during saner times?





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**W**e argue that, riskier the security, the longer you may need to hold on to it to ensure that you do not erode capital. Note, however that we are not saying that if you hold a risky security long enough, you will never erode capital; our contention is that a risky security might lose capital on the way; but if you give it enough time, it can recoup your capital.

There is a big debate in world of finance: are returns to any security random or is there a structural way in which we can expect to predict returns? The authorities are divided right in the middle: academicians dismiss any notion that market-beating strategies can be developed (it will be easily replicated, they say); practitioners justify their existence (and high fees!) by touting their Midas touch of generating alpha. Since this is not the place to resolve their differences, we will honour both, and try to make our point from both the theoretical and the practical perspective.

## The Theoretical Argument

The advantage of the academic position is that answers can be “proved” mathematically. The academic position is that returns to any security are normally distributed with a mean  $r$  and a standard deviation  $\sigma$  (synonymously called risk or volatility).

The mean return suggests that the asset will go up by a specified percentage in a normal year. However, the standard deviation means that there will be variation around the mean (*Graph 1*).

Long term mean equity returns and volatility, as calculated by PARK, are 15% and 20% respectively (based on the BSE Sensex). Hence, we expect equities to return 15% in a normal year. However, with a 99.9% confidence interval, returns can be as high as  $15\% + 3 \times 20\% = 75\%$  in a year as also, as low as  $15\% - 3 \times 20\% = \text{minus } 45\%$  in a year.

R best case =  $15\% + 3 \times 15\% = 75\%$

R worst case =  $15\% - 3 \times 15\% = -45\%$

Continuing with our example of equity as an asset class, we can say that ignoring

volatility the asset will return 15% a year on an average. Hence, we can write:

Return in  $t$  years =  $(1+r)^t - 1$

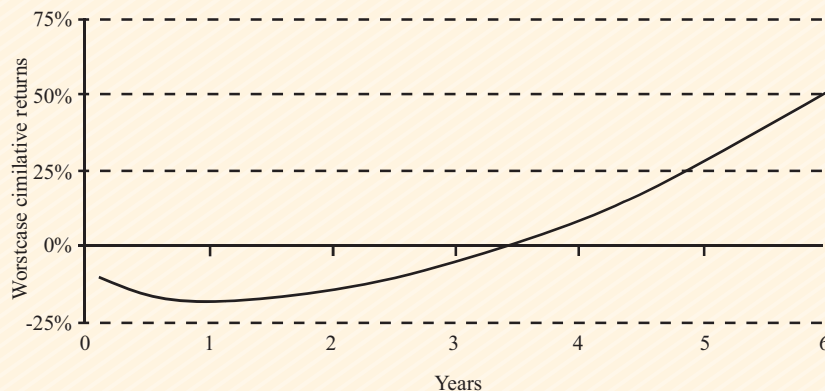
We also know that as we forecast more in the future, our projections become riskier, or volatility of our forecast becomes higher - but less than linearly with time:

Volatility estimate for  $t$  years = Annual Volatility  $\times$  square root of  $t$

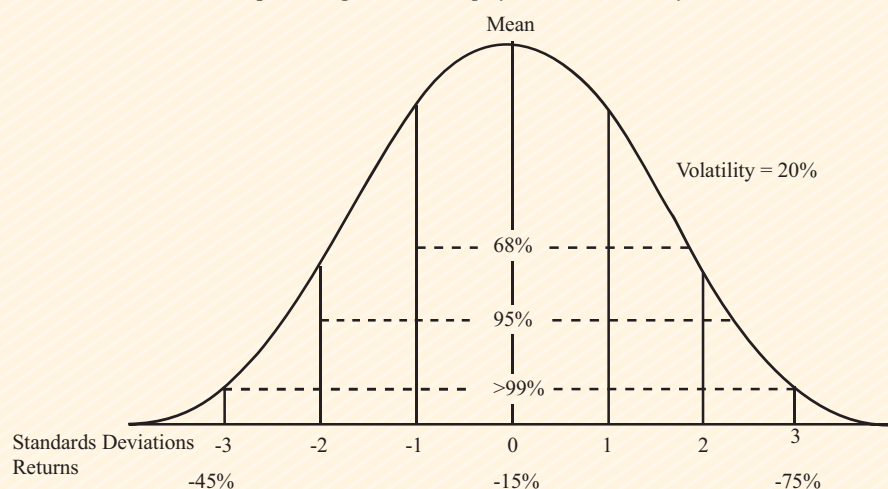
What we now have for every year is the expected return and the expected volatility. Note that while the return function is exponential in nature, the volatility function is a square root function of time. We can now solve for the minimum value of the year  $n$ , such that, with reasonable confidence we can say that the cumulative return till then is zero, i.e. that capital is protected.

Worst case return in  $t$  years  
 $= [(1+r)^t] - [1 - 3\sigma\sqrt{t}]$

**Graph 2: Capital protection analysis**



**Graph 1: Long term Indian equity returns and volatility**



In our equity example,

$r = 15\%$

$\sigma = 20\%$

Thus, plotting this worst case return as a function of time, we get graph 2.

This means is that if we are willing to lock in our capital for a period of 6.0 years, we can say with 99.9% confidence that we will at least get our (nominal) capital back. Note that if we want lesser certainty about our capital, say, only 95% confidence, we will still have to lock in our capital for 3.0 years.

## The Practical Angle

Mutual funds have always implored us to consider our equity investments for the long term. Even after discounting the fact that a long term investor is more valuable for an asset management company (AMC)

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as it gives the portfolio manager certainty over his corpus, their words still carry some empirical weight. The recent slew of capital guarantee funds that were launched after SEBI allowed them, all come with a lock-in clause.

Staying long enough with a risky security is no guarantee that you will end in-the-money. Anyone who bought Himachal Futuristic Communications Limited (HFCL) at above Rs. 1,000 levels in the 2000 bull-run and still holds it at Rs. 30 levels will surely appreciate the fact. However, this is where diversification helps the investor. At the index level, anyone who invested at the 6,130 level of Sensex in February 2000 is now in-the-money, though he had to wait for almost 5 years before reaching there (Sensex ended at 6,158 on 29th November 2004)!

With markets at unprecedented high levels and fund managers undecided on how long the bull-run will continue, the later prefers a substantial lock-in period before their performance is judged. Not surprisingly, most of the capital protection funds have a three to five year lock-in period.

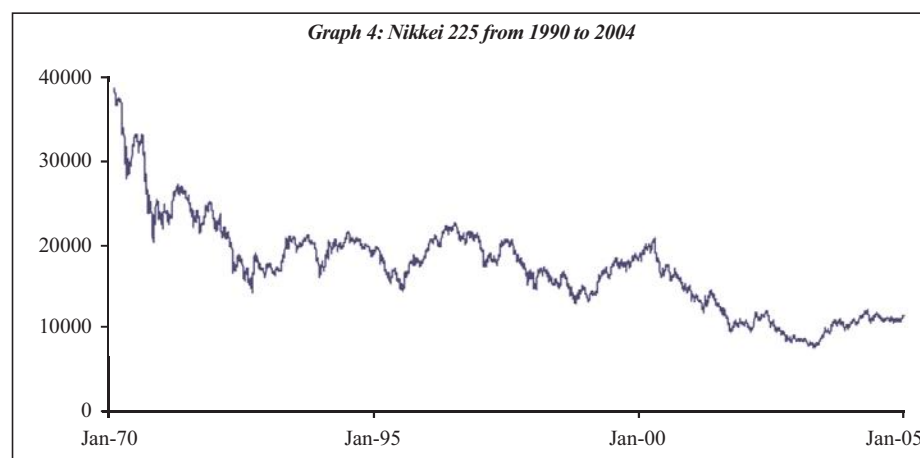
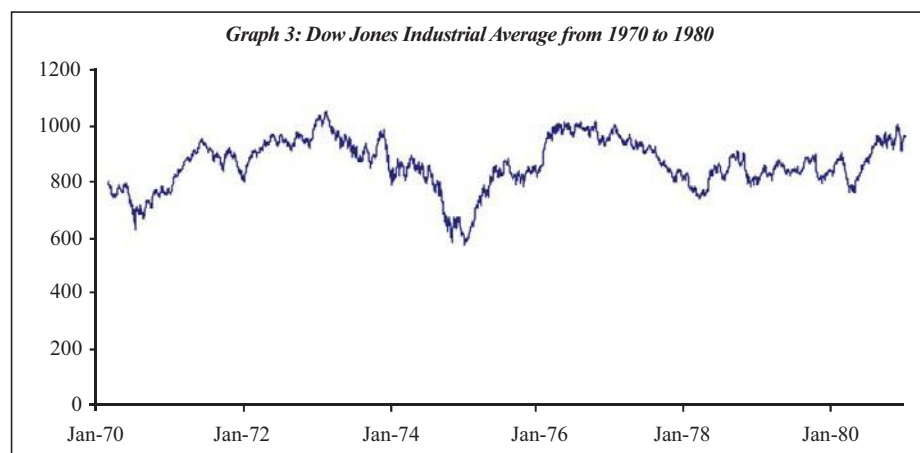
Fund managers, however, plan to be extra cautious when it comes to the capital raised through the NFOs of the

capital protection scheme. They will invest 60%-70% of the money raised through the capital protection schemes into long tenor debt instruments. Note that Rs. 68 invested in 8% p.a. debt (current yield on long term bonds) yields Rs. 100 at the end of five years. Hence, your (nominal)

can draw from the much longer history of the above markets?

We take two specific cases: a) Dow Jones from 1970 to 1980 and b) Nikkei from 1990 to 2004. If you calculate the annual mean returns and annual standard deviations, the result will be:

Index	Time period	Number of years	Mean annual return	Annual standard deviation
Dow Jones	1970 to 1980	11 years	1.59%	14.73%
Nikkei	1990 to 2004	15 years	(7.88%)	24.04%



capital is protected. That leaves the fund manager with Rs. 32 to invest in equities. Even if the market nose-dives from the current levels, the fund manager is betting that in the next three to five years, he will at least be in a position to return our capital.

## How Do You Explain The Dow in 1970s or Nikkei in 1990s?

We have seen the above work in action over long periods of time in the Indian scenario. But is there any learning that we

Note that over very long periods of time (11-15 years), annual returns have been either close to zero or (worse!) negative! The risk number (standard deviation) is positive (by definition) and reasonably large.

If someone entered the market at the beginning of the market collapse of Nikkei in 1990, thinking that all will be well in the long run, his expectations have been belied (and continue to be so). Similarly, during the great stagnation of the 1970s meant that the returns (even over 11 long years) from equities were measly, barely



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FPSB India is exploring the possibility of appointing reputed educational institutions to conduct the CFP<sup>CM</sup> Certification Education Program across India. Interested Educational institutes are requested to contact Ms. Priti Gharat at [priti@fpsbindia.org](mailto:priti@fpsbindia.org) for

keeping their head over water.

Note that what has been proved wrong is the expectation of the mean annual return. What we happily assume as 15% for the Indian scenario over the next few years going forward, was proved wrong by a long shot in the above instances. What should an investor do in such situations? The right question to ask, therefore, is “how do I correctly set equity market return expectations?”

## How can I set the expected returns expectation?

Setting the expected return is an evolved science (and to some extent, an art). There are many econometric models that link the fundamental underlying variables of the

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economy to the expected returns from the various asset classes. Let us look at one such theory that has gained prominence over the last few years in India.

One of the common themes that have resonated over the last couple of years of bull-run has been the expectation that the growth story in India will continue. The belief goes that that real Indian economy will grow at 8-9%, the corporate sector (since it does not include the laggard agriculture) will grow at 2-3% higher, and accounting for an inflation of 4-5%, there is no reason why the earnings of the corporate sector should not grow at 15-17%. If the earnings continue to grow at this rate, there will hopefully be no PE compression and hence the market returns of 15-17% are safe to assume.

If any of the above estimates go wrong, then the expected return will come down. For example, the stagflation of the 1970s meant that the corporate earnings of the USA had slowed. Japan went through

a terrible depression in the 1990s (and is yet to recover!), which meant that the economy itself collapsed, leading to a loss of earnings growth. Note that when the earning capacity collapses, typically the market punishes the prices further, by compressing the PEs.

## Conclusion:

As an investor, equity should be a long term asset. There will be violent fluctuations in the markets but there is no reason to panic, if your horizon is truly long term. For short term, equity investment entails a large risk. If you need any money for near term milestones, consider debt: equity investments should be locked long enough to help you build

wealth. However, do set your return expectations right.

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Just hoping that in the long run, things will work themselves out, may not hold good.

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