After a long period without significant market upheavals, investors might be forgiven for pushing volatility down their list of concerns. We think that would be a mistake. Low volatility can sometimes represent the calm before the storm. But even when the storm hits, we don’t think volatility is necessarily something to be feared. It can indicate danger, but it can also signal opportunity. What is crucial is that investors are able to determine which and have a plan ready so they can react appropriately.

How investors approach volatility depends critically on the immediacy of their targets. Short-term investors may find that volatility management techniques are useful. However, for those focused on the longer term, volatile markets can present significant opportunities to enhance results. In this article, we try to quantify the short and long term and look at ways investors can overcome their natural aversion to investing in volatile markets.

Defining our terms
Modern portfolio theory defines risk as volatility and tells us that there is a proportional relationship between volatility and expected returns – an investor must accept uncertainty if they are to generate returns in excess of the ‘risk-free rate’. Thus it is most efficient to minimise volatility for a given level of return, or maximise returns for a given level of volatility.

Under this definition, volatility is a measure of the variation in results, typically expressed as their standard deviation from an average level. This can, however, lead investors astray. Take the simple example of two assets, A and B, in Figure 1. The statistical volatility of A is far higher than that of B; indeed, technically, B has zero volatility. However, it is obvious that, over the three-month reference period, asset A was the better investment to own.

Figure 1: Lower volatility does not necessarily mean better returns

<table>
<thead>
<tr>
<th>Month</th>
<th>Asset A Return</th>
<th>Asset B Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.0%</td>
<td>-5.0%</td>
</tr>
<tr>
<td>2</td>
<td>4.0%</td>
<td>-5.0%</td>
</tr>
<tr>
<td>3</td>
<td>-4.0%</td>
<td>-5.0%</td>
</tr>
<tr>
<td>Compound Return</td>
<td>7.8%</td>
<td>-14.3%</td>
</tr>
</tbody>
</table>

There are, of course, many other ways of defining investment risk. For many investors it is simply the possibility of permanent loss, but for some it is more specific. For example, a pension fund might consider its main risk to be having insufficient assets to meet the retirement needs of its pensioners. For a sovereign wealth fund, the most worrying issue might be owning a stake in a company involved in some illegal activity. Insurance companies, on the other hand, might consider the major risk to be illiquidity, i.e. not being able to sell assets when needed to pay claims. For most investors, an ever-present concern is whether the purchasing power of their money will be eroded by inflation.

It is clear that the terms ‘volatility’ and ‘risk’ are not synonymous. Yet, although they are used more or less interchangeably, very few people would be satisfied if the answer they received to the question ‘what’s the risk of this investment?’ was simply ‘five’.

Sequencing risk
Much analysis of risk assumes that an investment is affected in the same way whenever returns occur. In truth, of course, timing is vital. A 10% market fall when a saver is 25 and their accumulated savings are small should be much less traumatic than when they are 45 and their savings are likely to have grown to something...
a blunt instrument at best as it can only give some control over the magnitude of possible losses, and none over their incidence or timing.

An alternative way to control sequencing risk is through active management of the portfolio to try and avoid steep falls in value. This leads to outcome-oriented strategies, such as low-volatility hedge funds, flexible fixed income or multi-asset portfolios. In practice, a blend of these solutions is perhaps useful. Having available a range of outcome-oriented strategies with varying targets and volatility tolerances will help in striking the right balance between achieving real returns and avoiding major crashes.

Spotting the difference between threat and opportunity

Are there time horizons over which volatility does constitute a significant risk? The answer depends very much on the relationship between volatility and returns. Statistically and empirically, high market volatility is associated with negative returns. But if returns have recently been negative, then the market will now be priced more cheaply than before, which should provide a buying opportunity.

Of course, the potential for higher expected returns comes at the cost of a greater probability of significant loss. This is a trade-off the extent of which varies with the time period being considered and the objectives of each investor. Figure 3 shows the weekly returns from the S&P 500 Index over the past 54 years (blue line) and the subset when the preceding volatility was relatively high (orange line). The distribution of returns in the high-volatility subset shows significantly more extreme results ('fatter tails') than the full sample, while the median is more or less the same for both sets of data. Figure 4 shows the return distributions for annual periods for the same index over the same history.

This time the high-volatility subset tails are slightly fatter, but the median return is significantly higher.
Figure 3: After a volatile period, we see more extreme results


Figure 4: Annual results still have downside exposures but stronger value premiums


Figure 5: When does volatility matter?

Daily data from 31 December 1959 to 30 June 2014. Index used is the S&P 500 Price Return. Results over 12 months are annualised. One-month volatility look-back. High volatility subset refers to top decile historical volatilities. Source: Bloomberg and Schroders.
Conclusion

Our conclusion has to be that volatility is not risk. Rather, it is one measure of one type of risk. Pragmatic investors recognise this, and appreciate that its use as a proxy is an imperfect short cut. Volatile markets certainly bring uncertainty about whether investors' goals will be achieved. At the same time, volatility is also a very useful indicator, a warning of both short-term threats and longer-term opportunities. For those concerned about the near term, volatility management techniques may be useful tools for increasing certainty. But for those more focused on longer-term outcomes and able to weather the storm, volatile markets can present significant opportunities. Armed with these insights, investors should be able to take better allocation decisions at times of market stress.

In the short term (Figure 3), the frequency of weak returns following high volatility usually offsets any benefits to be gained, so market volatility represents a threat. For those investors likely to be sensitive to such losses, the use of portfolio volatility management techniques, such as volatility capping or targeting, can therefore be an attractive option.

However, the very same signal – a period of high market volatility – can also trigger the completely opposite response. Investors willing to withstand a short stormy period can take advantage of others’ near-term concerns to exploit cheap valuations (Figure 4). This is a manifestation of the value effect, whereby those targeting longer-term investment outcomes can profit from volatility.

We further analysed many different periods, volatility subsets and investment horizons to draw broad conclusions, based on a typical investor’s likely goals. We concluded that high market volatility posed the greatest threat for those with a horizon below three months and offered decent opportunities for those with horizons from six to 24 months, while the distinction tended to fade beyond 24 months. Figure 5 summarises the analysis, showing the dispersion of results for differing investment horizons.