How deep is your risk?

All investors know that they need to take risks in order to achieve returns higher than cash. If you asked ten investors if equities were more risky than cash, most would agree. But the true answer depends on how one understands risk. The investment industry has done a poor job of explaining risk as it relates to an investor and tends to equate risk with return volatility. This note suggests that three levels of risk exist: shallow risk, mid-depth risk and deep risk. Shallow risk relates to the sometimes brutal, but recoverable losses from equities, whereas deep risk is the permanent loss of capital. The latter matters more to long-term investors than the former.

Client Communication

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How deep is your risk?

"Short-term crashes can be painful, but long-term returns are far more important to wealth creation and destruction."

Cliff Asness, Principal AQR (a systematic, factor-based investment house)

An insight into equity market risk

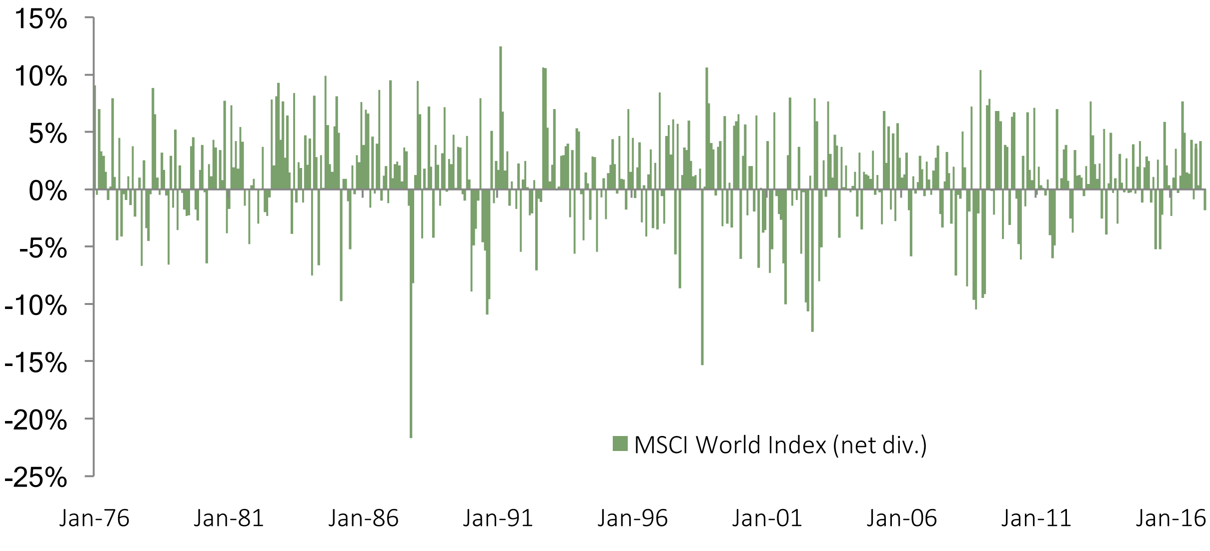
Investors know that equity markets can be risky. The trouble is that 'risky' means different things to different people. William Bernstein – a neurosurgeon-turned-adviser and prolific investment writer – wrote a great, short booklet on risk[1], where he explained the different risks that equity investors face, as follows:

'Risk, then, comes in two flavors: "shallow risk," a loss of real capital that recovers relatively quickly, say within several years; and "deep risk," a permanent loss of real capital.'

In this brief note we will address both of these types of risk and throw in a level of our own '*mid-depth risk*'.

In the investment world, risk is often used synonymously with volatility; but that is a poor gauge of what risk means to an individual. Just because equity market returns are volatile does not, in and of itself make them risky. Take a look at the two charts below that provide data for the developed equity market monthly returns since 1976 (a proxy for riskier 'growth' assets) and those of short-dated global government bonds, where all non-GBP currency exposure has been eliminated by hedging back to GBP ('defensive' assets).

Figure 1: Global developed equity market returns are volatile (1/1976 – 4/2017)

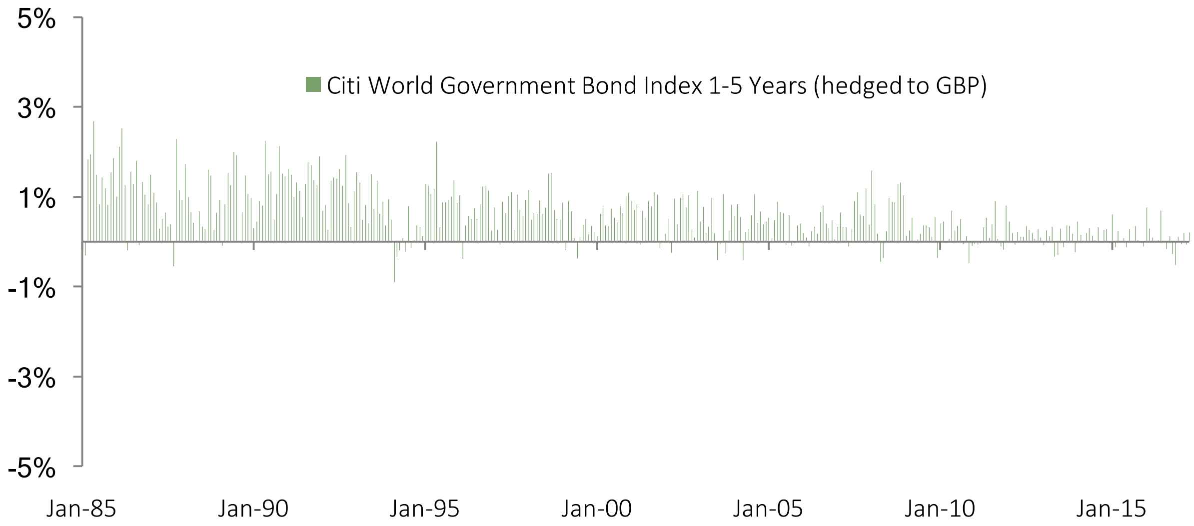


Source: Morningstar Direct © All rights reserved.

The range of monthly returns is wide. On the other hand, looking at low risk bond returns (below) demonstrates that the range of monthly returns is far narrower. We have kept the chart scales the same to make the difference between the two key investment building blocks apparent.

[1] Bernstein, W.J., (2013), Deep Risk: How History Informs Portfolio Design. Available at www.amazon.co.uk

Figure 1: Hedged global bond returns are far less volatile (1/1985 - 4/2017)



Source: Morningstar Direct © All rights reserved.

In investment industry terms – and on this basis - bonds are less risky than equities. Unfortunately, such a statement of risk fails to take into account an investor's circumstances, not least their investment horizon and objectives.

Why volatility alone is not a good measure of risk

The industry's focus on the statistical properties of returns and the use of phrases like '*the annualised standard deviation of returns of this portfolio is 10%*.' is meaningless to most investors.

All a risk percentage number means is that for a portfolio with, say, an average return of 5% and a risk of 10%, two thirds (67%) of observed returns – known in statistics as one standard deviation – fall within a range 10% either side of the mean of 5%, i.e. -5% to +15%. Nineteen out of 20 (95%) of all observations are captured by a range two times the risk percentage (two standard deviations) either side of the mean return i.e. -15% to +25% in this case.

This can be a useful insight - if you do this simple maths – as it provides a rough and ready indication of how bumpy your investment ride is likely to be. Yet in terms of describing what risk means to you, it is a poor measure.

What then is risk?

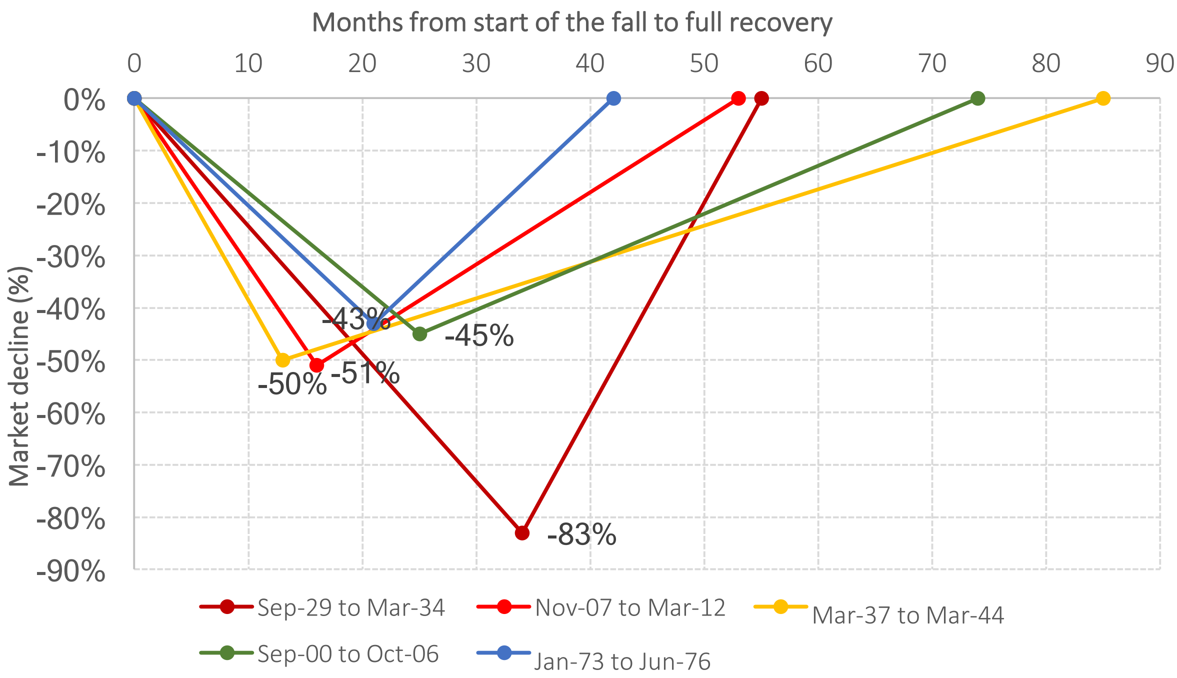
We need to dig a little deeper. At its very basic level risk can be defined as: the *probability* of an *adverse* event (*hazard*) happening and the *effect* of this exposure, due to this specific hazard *on you*. The words in italics are critical, particularly as each is often open to interpretation or estimation. To provide a measure of how risky an investment is, one needs to make sure that each element forms part of the assessment.

This is perhaps where the three levels of risk – shallow risk, mid-depth risk and deep risk come in useful. Let's look at each in turn.

Shallow risk – precipitous equity market crashes that recover relatively quickly

This first level of risk is the one that most investors focus on, yet is perhaps the less relevant, particularly for those with long investment horizons. These are the scary and emotionally fraught times when equity markets fall dramatically, the latest example of which was the Credit Crisis of 2007 to 2009. We illustrate below, the five largest equity market falls in the US market, since 1927 (in US$ terms).

Figure 2: Five largest falls in the US equity markets between 1927 and 2017



Data source: Ibbotson SBBI US Large Stock TR, Jan-25 to Apr-17. Morningstar © All rights reserved.

A similar story exists for the UK equity market.

Table 1: Five largest falls in the UK equity markets between 1970 and 2017

Peak date	Decline	Trough date	Recovery date	Decline (m)	Recovery (m)
Sep-72	-67%	Nov-74	Apr-77	27	29
Jan-00	-41%	Jan-03	Dec-05	37	35
Nov-07	-41%	Feb-09	Feb-11	16	24
Oct-87	-33%	Nov-87	Jul-89	2	20
Jan-70	-18%	May-70	Apr-71	5	11
Average	**-40%**			**17 months**	**24 months**

Data source: MSCI UK Index (net div.), Jan-70 to Apr-17. Morningstar © All rights reserved.

Despite the magnitude of these falls – and not underestimating the emotional impact of living through such times – it is evident that the courageous investor who owns equities (at an appropriate level), had to wait between two to seven years to get back to their original pre-crash value (before inflation). Most investors have investment horizons far longer than this. This is what William Bernstein means by 'shallow' risk.

The key mitigants are allocating a suitable amount of the portfolio to defensive bond assets, remaining well diversified across securities and markets and being emotionally strong and staying the course. Selling out in panic is a disastrous strategy.

Mid-depth risk – relentlessly disappointing returns

We see mid-depth risk as a prolonged period of disappointing market returns – perhaps over 10 years or more returns - after accounting for inflation. These periods do exist as the chart below illustrates for US equities since 1955.

Table 2: Worst returns from US equities over different time horizons (after inflation)

	5 years	10 years	15 years	20 years
Worst return % (p.a.)	-9.9%	-5.9%	-2.2%	0.6%
Impact on $100	$59	$54	$72	$113

Data source: Ibbotson SBBI US Large Stock TR, Jan-55 to Apr-17 (in real terms)

For those in the accumulation phase of investing, this is less of a problem as subdued markets allow them to make regular contributions at lower market levels. Warren Buffett captured this nicely when he wrote:

> *'If you expect to be a net saver during the next five years, should you hope for a higher or lower stock market during that period? Many investors get this one wrong. Even though they are going to be net buyers of stocks for many years to come, they are elated when stock prices rise and depressed when they fall. In effect, they rejoice because prices have risen for the "hamburgers" they will soon be buying. This reaction makes no sense. Only those who will be sellers of equities in the near future should be happy at seeing stocks rise. Prospective purchasers should much prefer sinking prices.'*

Warren Buffett, 1997 Letter to Berkshire Hathaway shareholders

The trouble comes when investors are in the early stages of decumulating assets – usually taking money from their portfolio to meet retirement expenditure – where assets get depleted faster than is optimal, but many years of retirement still remain. The sequence of returns can make a big difference to wealth outcomes.

Mitigants include owning a well-diversified portfolio, sensible upfront cash flow modelling to assess the scale of the problem, setting in place some dynamic adjustments to the spending plan and regular discussions with an adviser to talk through the challenges – and options – as they arise.

Deep risk – a permanent loss of wealth

Bernstein defines deep risk as the permanent loss of wealth on account of four events: hyperinflation, such as that of the Weimar Republic, where from 1921 to 1924 bonds and cash lost nearly all their value; prolonged deflation causing a depression and high unemployment; devastation i.e. wars and geopolitical events, such as the Bolshevik revolution (almost 100 years ago to the day) resulting in the closure of the Russian stock market and total default on Tsarist government debt; and finally confiscation, which happened in Lenin's Russia and still happens today e.g. the Argentinian government's expropriation of the Spanish oil company Repsol's assets in the country in 2012.

There are two investment behaviours that translate shallow risk into deep risk. Being shaken out of the market by a precipitous rapid fall (shallow risk) and then failing to get back in again – as there never seems to be a good time to do so - crystallises a real loss (deep risk). Owning concentrated stock portfolios can do the same; a recent study[2] in the US shows that 26,000 listed companies have been in and out of the US equity exchanges since 1926, with a mean life of only seven years. Only 36 companies have made it through from 1936. Owning material allocations to stocks that fail is deep risk.

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2 Bessembinder, Hendrik, Do Stocks Outperform Treasury Bills? (May 22, 2017). Available at SSRN: https://ssrn.com/abstract=2900447

The best mitigants of deep risk are to own a globally diversified portfolio of several thousand stocks distributed predominantly across developed equity markets of democratic countries with a sound legal framework. Equities provide the prospect of strong, long-term inflation-plus returns. In post-war Germany and Japan, bond and equity markets fell by over 90%, yet while bonds ended up almost worthless, these countries' equity markets recaptured their value in around a decade in the case of Germany and around 15 years or so in Japan. Bonds are more vulnerable to high or sustained inflation, making them the riskier assets for long-term investors, despite traditional measures of risk – such as standard deviation of returns – pointing in the other direction. Emerging market exposure should be diversified and moderate as the risks of expropriation and geopolitical crises are higher than in developed markets.

Perhaps the best insight into the difference between the two is provided by Bernstein himself:

> *Put into different words, shallow risk, if handled properly, deprives you only of sleep for a while; deep risk deprives you of sustenance...Put another way, stocks protect against deep risk, but exacerbate shallow risk.*

In conclusion

Investors know that placing money in the bond and equity markets carries risk. Yet the way in which many look at, and measure, risk is disconnected from investors actual longer-term investment horizons, focusing on shallow risk, rather than deep risk. Unless one understands the *probability* of an *adverse* event (*hazard*) happening and the *effect* of this exposure, due to a specific hazard *on the individual investor,* then it is likely that the real risks faced by an investor are masked by the shallow risks that have more emotional impact. Owning more 'low risk' bonds (or cash) is not necessarily always the right answer when trying to avoid the deep risks that investors face.

Other notes and risk warnings

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