



Downside protection; What, why, who, how and when?

with **Tim Cook**

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All investors require a rate of return — at a level of risk they can accept and commit to for the long run. That's why the idea of downside protection is attractive to most, if not all investors.

But what does downside protection actually involve? This Q&A also looks at why investors should consider downside protection? Who downside strategies are appropriate for? How investors can protect against downside risks? And when investors should employ downside strategies?

What is downside protection?

Downside protection is an important aspect of risk management that should be considered for all portfolios¹. Downside protection strategies aim to reduce the frequency and/or magnitude of capital losses, resulting from significant asset market declines. Downside protection strategies involve adjusting a portfolio's market exposure to limit the impact of potential losses from market downturns. These strategies can be applied to different types of asset market exposures, but are most commonly focused on equity, followed by fixed income.

¹ We note that there may be specific circumstances where downside protection may be even more important than at other times, e.g. particular types of market environments, particular times in an investor's investment horizon/funding level relative to objective/risk appetite.

² This is especially an issue if an investor incurs a significant loss when their risk exposure is greatest, e.g. as they move from a capital accumulation phase to a capital decumulation phase at or near retirement. See "When" section for more details.

Why should investors consider downside protection?

Large percentage capital losses require even larger subsequent percentage capital gains for the portfolio to recover fully. The larger the losses, the disproportionately greater the size of the percentage gains required to make up for the losses. Similarly, the longer the period over which the losses occurred, the greater the gains required and/or the longer the period over which the gains need to be made.

For example, the S&P 500 Index fell 49% from the start of the sub-prime crisis in August 2007 to the market trough in February 2009. Consequently, it took another 4 years where the market rallied 98% to fully recoup these losses, i.e. the subsequent gain was nearly double the size of the fall.

In short, if you have a big setback early in your compounding period, then you have a lot of catching up to do to get back to square one because your principal has shrunk, particularly if your investment horizon is shorter than the time needed to recover².

Since the risk tolerance of most investors is asymmetric, it is equally if not even more important for investors to consider downside protection strategies to manage the degree to which down markets impact their portfolios, as well as to pursue strategies that accumulate wealth in up markets.

Who should consider downside protection?

All investors desiring to preserve capital, as well as participate in capital accumulation, should consider downside protection. In particular, we believe the segments below have particular needs that downside protection strategies can help address:

- » Superannuation funds, especially with members close to retirement age;
- » For Purpose organisations needing capital preservation while desiring to maintain target levels of expenditure/grants each year;
- » Insurers needing to meet capital adequacy standards while maintaining market competitiveness;
- » Financial institutions requiring capital growth, but needing to limit potential losses from market participation to protect their balance sheets and meet stakeholder requirements.

The most appropriate strategy for any particular investor depends on many factors including an investor's specific:

Objectives. What is the investor's required rate of return? What level of risk can they survive at? Generally, there is a trade-off between return and risk objectives. Russell can help investors by modelling different strategies to determine the one that balances the investor's return-enhancing vs risk-reducing objectives, i.e. the strategy that has the highest probability of achieving the investor's return objectives, while balancing their risk constraints.

Governance. What is the investor's decision-making framework? How often do the decision-makers meet and what types of decisions require approval vs which ones can be delegated to day-to-day managers? Other considerations being equal, if stakeholders are comfortable with outsourcing more tactical decisions to experts, the more active and resource intensive downside protection strategies can be employed.

Risk budget. Additionally, investors may allocate most of their risk budget to strategic asset allocation decisions, while others may allocate some of their risk budget to tactical trading activities to avoid emerging risks and take advantage of new opportunities as they arise.

Resources & Expertise. Similarly, investors with limited investment resources and expertise may choose to outsource or delegate to asset managers who will consider downside protection strategies as part of their overall management of the total outsourced portfolio. At the other end of the spectrum, investors with dedicated in-house expertise, ready access to sophisticated implementation systems and fully integrated investment

processes that enable seamless implementation of market insights into actual portfolios, may choose to run their own dynamic trading strategies.

Time horizon. What is the investor's timeframe to achieve their objectives? Do they want to act on a short term tactical view of the market that they think is very likely to occur? Or is it as part of a holistic risk management approach to guard against less likely outcomes that have catastrophic impact if they were to occur in the longer term?

Market outlook. Investors may wish to proactively protect their portfolios by employing downside strategies if they are concerned about a high probability of capital loss in the near future due to uncertainty about significant external events that can impact the market. Alternatively, they may capitalise on the market outlook of investment professionals and outsource to those with the insight and implementation capabilities.

Funding constraints. What are the consequences of incurring a capital loss? What is the maximum funding shortfall the investor can tolerate, and for how long before the investor is unable to recover?

Costs & desired level of protection. There are costs associated with implementing downside protection – either as opportunity cost in the form of forgoing the upside or explicit cost of hedging in the form of an option/insurance premium. To keep the cost of protection affordable, investors often specify a particular range of outcomes for which downside protection is required (instead of fully hedged protection across all outcomes) by selling as well as buying different combinations of options at different prices and protection levels to achieve desired net outcome (spreads, collars)³.

Investment guidelines. What type of investment strategies and securities are allowed in the investor's investment guidelines? Are they allowed to use derivatives or use leverage? This will influence the type of strategies employed.

The next section explains the different approaches to achieve downside protection.

³ *There is no free lunch in insurance – investors will need to 'pay up' and increasingly so when risk is deemed high. This is exacerbated when markets are at extremes and likelihood of market declines very high. i.e. can be prohibitively expensive when market uncertainty rises – just when investors want the protection. Over the longer run, markets generally price risk more efficiently, so longer term portfolio protection is effectively de-risking the portfolio. This is why often investors will focus on hedging 'tail risk' in the short term when markets are expected to be particularly volatile – those infrequent but extreme outcomes that can be so damaging to portfolio performance. Hard or soft floors (guaranteed protection or high probability protection) can also be considered to suit investor needs.*

How can investors protect against downside risks?

There are a number of ways to reduce risk of losses in the event of large market falls. In part we would consider the first three methods described below as a path or rite of passage required prior to implementation of an explicit downside protection strategy.

Only after due consideration of these longer-term strategies in building a robust fully diversified portfolio, should you progress to implementation of a specific downside protection strategy (last two methods).

1. Diversification;
2. Reducing the exposure to risk assets physically;
3. Targeting specific market exposure, e.g. by exploiting behavioural biases using smart beta strategies;
4. Using derivative instruments to change the portfolio's market exposure to achieve more desirable outcomes, based on short term tactical market views;
5. Creating custom protection to manage longer term risk more cost efficiently, such as dynamic option replication strategies.

1. Diversification:

Diversification is the simplest way to reduce exposure to fluctuations in traditional equity and fixed income markets. By diversifying into alternative assets and strategies that benefit from less correlated return sources such as inflation, illiquidity, entrepreneurial risk and manager insights, the portfolio is less sensitive to traditional return drivers such as the equity market premium and interest rate movements.

For example, Russell Investments' multi-asset funds in Australia have diversified defensive asset exposures including global bank loans. Exposure to these credit portfolios reduce the portfolios' sensitivity to interest rate fluctuations, whilst capturing the credit risk and bond illiquidity premiums through skilfully selected active managers. For equities, actively-managed multi-factor portfolios provide strategic exposure to equity factors. These portfolios include dynamic management of countries, currencies and sectors which are informed by Russell Investments' cycle, valuation and sentiment framework.

2. Physical reduction in risk assets:

Another way to reduce a portfolio's downside risk exposure is to physically reduce asset allocations from more volatile assets like shares and property, to less volatile assets like cash and bonds.

As transaction costs to buy and sell physical assets are higher than using derivatives, Russell portfolio managers prefer to use derivative futures to manage marginal cashflows and implement tactical portfolio views, e.g. sell S&P/ASX 300 futures to protect against a risk event or market reversal. See example involving short term tactical trading using derivatives for more details.

3. Targeted market exposure:

One way to maintain exposure to equities and participate in market rallies, but limit the risk exposure to the downside, is to target segments of the equity market that are less sensitive to market movements. There are a number of different equity strategies that aim to take advantage of behavioural biases, such as defensive equity, low volatility and minimum variance. These smart beta strategies seek to systematically capture particular factor exposures that are expected to outperform the broad market and/or incur lower total risk.

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3. Targeted market exposure (continued):

In recent years, Russell has created Defensive and Dynamic indexes that segment the market according to a company’s quality characteristics, in addition to volatility in assessing a company’s true risk. We believe the addition of quality is very important, because investors looking at low volatility alone can be blind to the risk associated with firms with high leverage and uncertain earnings prospects. Combining quality and volatility assessment sharpens the focus of examinations into which companies are truly low risk and which are truly high risk.

4. Short term tactical trading using derivatives:

Derivatives can be used to adjust portfolio exposure especially if investors are very concerned about the possibility of near term risks and the potential impact on their portfolios, or if investors have a strong view on the market outlook in the short run. The use of derivatives can be used to achieve either outright or contingent exposures, e.g. using futures or options respectively.

For example, if investors believe there is a significant risk of markets falling sharply due to a geo-political event or deteriorating risk appetite in the market, investors can sell equity futures to directly reduce their exposure to the market, or purchase put options as a form of insurance against the chance of markets dropping below a certain level.

In terms of explicit costs, options tend to be more expensive than futures, especially when the level of market uncertainty rises. The benefits from options protection can often be swamped by the cost of the insurance premium in many cases, so tactical trading strategies using options are best used only when the market has not fully priced in the cost of the risk (usually cheap when markets are calm and rallying) or used for limited time periods only.

5. Longer term risk management example:

There are a number of rules-based dynamic hedging strategies that offer downside protection over a longer time horizon, but also aim to maintain a reasonable level of upside participation. They adjust asset allocations in a rules-based manner. These strategies set upper and lower buy and sell trigger points, determined by a cushion over a desired capital floor (maximum loss tolerance). The result is that dynamic hedging strategies buy more risky assets as the market moves higher and sell risky assets at lower levels to maintain the floor.

In particular, Russell’s Downside Protection (DP) overlay service is specially designed to limit losses in the event of large equity market declines, while not limiting upside potential by being out of equity markets. DP allows up to 70% of the equity allocation to remain in place with current investments/managers. It is responsive to changes in market conditions through dynamically adjusting the strategy as the environment evolves. The strategy is fully customisable – for example, the downside risk floor level and probability of breaking the floor are set to match the investor’s risk tolerance⁴.

⁴ Russell’s Downside Protection strategy has evolved to include enhancements such as ratcheting floors, based on our experience, to address some of the limitations of other rules-based strategies such as Constant Proportion Portfolio Insurance (CPPI). For details on how Russell’s Downside Protection Strategy works and for our actual performance record, see Cook, T. (2014), “Dynamic Downside Protection”, Russell Research, March.

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When should investors consider downside protection?

Downside protection can be used to manage portfolios under a number of different situations.

Probably, the first and most obvious scenario when investors typically consider downside protection is after equity markets have rallied strongly for a considerable period to protect gains to date (e.g. the rally in global equities since the 2016 US election, with many major markets notching double-digit percentage returns). However, many investors only start to seek to buy protection during or after market falls (eg. Brexit in 2016). Not only has the horse bolted, but this is the time at which protection costs the most.

While downside protection is most commonly considered after periods of increased volatility, Russell believes that the more prudent and cost efficient risk management approach is to proactively consider when market volatility is likely to increase going forward, and implement the appropriate type of downside protection strategy prior to volatility actually increasing⁵. This is because when volatility is already elevated, the cost of protection can be prohibitively expensive.

One of the fundamental conversations that Russell has with our clients at the start of a new client relationship is to determine their objectives and assess whether their investment strategy is able to meet these objectives under different market scenarios, taking into account their time horizon, wealth levels, risk budgets and other preferences. We would then consider any changes to their strategy, including exploring downside protection options, to increase the probability of achieving their objectives. This process is also an important part of our regular review with established clients, to ensure their investment strategy remains appropriate and on track to achieve their objectives.

All else being equal, the shorter the timeframe for wealth accumulation, the greater the need to consider protection in advance. For example, with sequencing risk⁶ greatest around retirement age (also the point of maximum wealth accumulation and the start of decumulation phase), it will be most important to consider downside protection ahead of this scenario.

In summary, each type of downside protection strategy involves benefits and costs (opportunity or explicit), so it is important to work with each investor to determine the appropriate balance of risk and return outcome preferences, in particular, to achieve as much certainty as they can afford, and identify and manage the risks they can/cannot accept.

In the end, downside protection (as with other investment strategies) is about helping investors achieve their required rate of return, at a level of risk they can accept and commit to for the long run.

⁵ This is one of the key areas that Russell's global team of investment strategists and portfolio managers continually assesses, taking into account changing market conditions, drawing on proprietary quantitative modelling and the combined experience and insights of our professionals. These insights are regularly shared with our clients through Russell's capital market research and market outlook publications.

⁶ Sequencing risk refers to the risk of receiving lower or negative returns early in a period when withdrawals are made from the underlying investments. The order or sequence of investment returns is a primary concern for individuals who are no longer accumulating wealth, but retired and living off the income and capital of their investments.

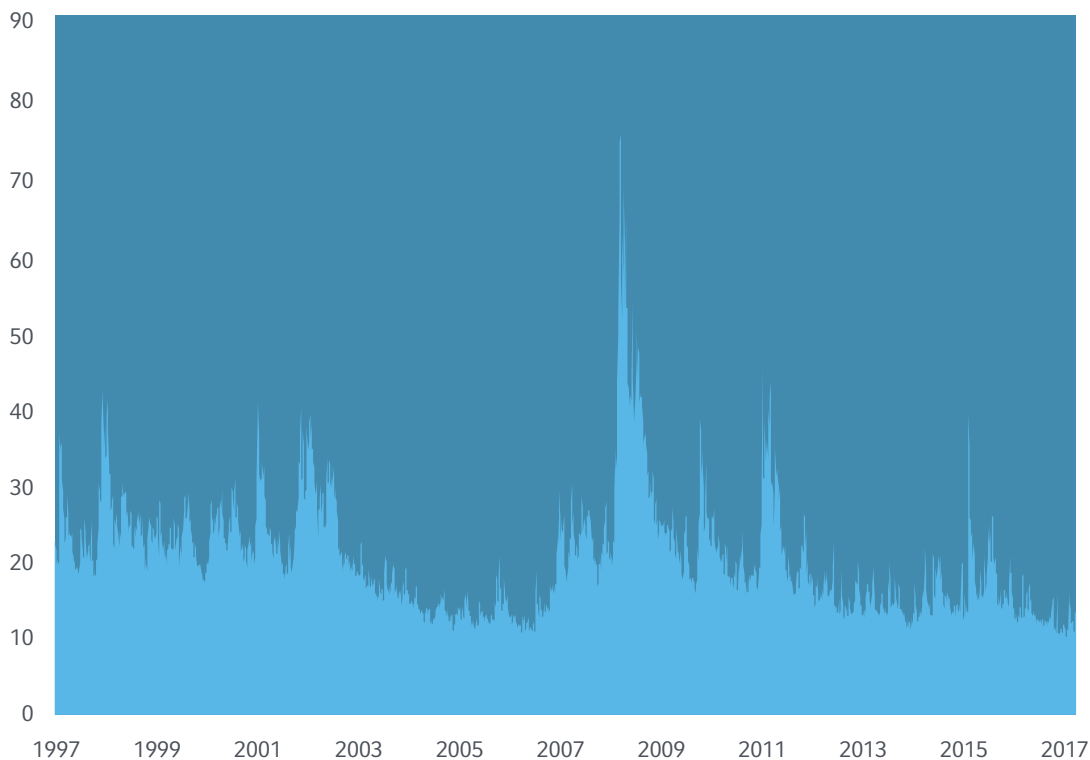
APPENDIX: VOLATILITY VS DOWNSIDE RISK

Volatility is a measure of the level of fluctuations in both up and down markets, and thus captures the both the upside and downside. While investors welcome volatility on the upside; it is downside volatility they want either to avoid or to be adequately compensated for. But downside volatility measures, such as semi-standard deviation and Sortino ratio⁷ have proven to be inadequate alternatives to plain-vanilla volatility measures. Volatility measures such as the CBOE Volatility Index (VIX)⁸ is a readily available and more commonly quoted index than one-sided downside risk measures.

In general, there tends to be a negative correlation between volatility moves and equity market moves, i.e. volatility increases when markets fall and uncertainty about the future grips the market with fear. The following graph shows that volatility has contracted to record low levels recently. Relative to history, this means that it is currently cheaper to seek out downside protection for equities via the usage of options.

Volatility Index

Index Level



⁷ The Sortino ratio is a risk-adjusted measure of excess returns, using only downside deviation in the measure of risk. It is the ratio of the return above the risk free over the standard deviation of negative returns. In contrast, the Sharpe ratio uses both downside and upside deviation in the measure of risk.

⁸ The CBOE Volatility Index (VIX) is a measure of the market's expectation for volatility over the next 30 calendar days based on the current pricing of a wide range of S&P 500 option strikes.

Further Reading

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