White Paper
Downside Protection

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Downside Protection Today

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Even the most prescient investor would have been hard pushed to predict the COVID19 crisis and the subsequent performance challenges it has caused.

However this crisis — as with most crises — has caused many investors to look more closely at the benefits of downside protection.

There are several different ways of achieving downside protection, so it's important to have a structured approach to considering, discounting, and eventually choosing between them.

In this paper we outline some of the main choices available to investors today.

Where to Start?

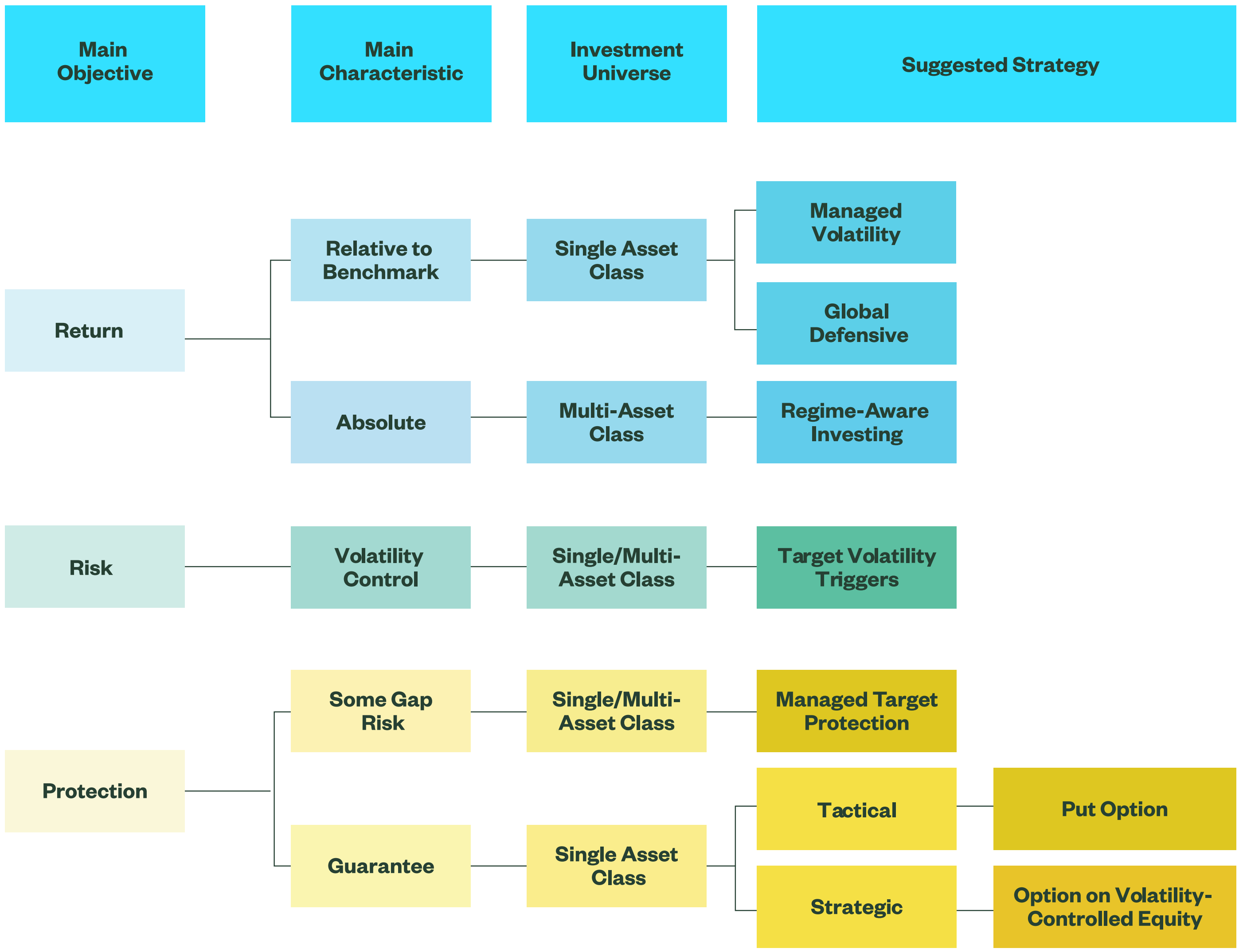
It can be helpful to consider what the main objective that you would like to achieve. Is it:

1. Maintaining your portfolio's **return** close to its target, while limiting downside risk?
2. Keeping your portfolio's **risk** (volatility) below its target by dynamically shifting between risky and lower-risk assets?
3. Ensuring a level of **protection**, to keep the portfolio value above a key level, either through dynamic rebalancing or the purchase of insurance?

Choosing the Right Downside Protection Strategy

The decision tree below can be helpful in understanding the wide range of options available. Once the main downside protection objective and associated desired characteristics have been decided, the required target universe helps further narrow down to the suggested strategy.

We go on to describe how each of these objectives can be targeted as well as more detail on the strategies in the following pages.



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1. Maintaining Returns While Limiting Downside Risk

This approach would benefit investors who need to aim for a level of expected return over the medium- to long-term, but can withstand some volatility on the way, for example defined benefit pension schemes who are trying to close their funding gap over the next 5–10 years but are still able to manage their cashflows in the near term.

These strategies could also suit investors who currently hold a fixed-income-heavy asset allocation, but with yields going below zero and the need for real returns have now decided to increase their expected return by capturing the equity risk premium, but without taking on the full risk of market-capitalisation equities.

Finally, this method might also aid investors who have suffered the volatility and disproportionate consumption of risk budget of an equity-heavy asset allocation over the current crisis, and would like to reduce their expected risk but want to remain invested in equities to capture their risk premium.

Remaining Invested in Equities While Reducing Your Risk — Managed Volatility & Defensive Equities

For investors who can remain invested in equities, this approach involves shifting from 'full fat' market-capitalisation equities, to something 'skinnier' in terms of risk, and is captured in both our Managed Volatility (MV) and Defensive Equity (DE) strategies.

Both these strategies keep investors fully invested in equities but use quantitative techniques to filter stocks for their lower risk both individually and when put together in a portfolio.

Investors could switch into, or reallocate portions of their equity holdings to, MV or DE to continue reaping the equity risk premium over the business cycle, with a reduction in overall risk versus 'full fat' equities, as a more palatable alternative to market-cap indices.

How to Choose?

The main difference between MV and DE is the approach to constructing the portfolio:

MV uses a benchmark-relative rules-based approach, keeping deviations from the benchmark on a stock, sector and country (inter alia) level, within bounds, so the final index is not too different in composition from the benchmark (although due to its lower risk construction, it should outperform during a drawdown).

On the other hand, DE takes an active approach and is benchmark-unaware: It chooses stocks from the full benchmark universe and is otherwise, in terms of weight, fully unconstrained. DE also takes a broader multi-factor approach in portfolio construction, accounting for factors such as value and sentiment, whereas MV has a purer focus on low volatility.

These investment strategies rely on the belief that a similar long-term return to the market-cap equity can be achieved through investment in lower volatility stocks. It should be noted that both approaches do generally leave the investor exposed to tail risk, i.e. extreme events, when their stock selection and portfolio construction techniques can become overwhelmed.

Taking A Multi-Asset Approach Through Dynamic Asset Allocation

For investors who don't need the risk premium of equities in any form, Dynamic Asset Allocation (DAA) could be of benefit. DAA takes as its starting point the Strategic Asset Allocation (SAA), where portfolios invest in a diverse set of assets, with the view that this mix should provide a stable risk-return profile over a business cycle.

However, the cornerstone of most SAA portfolios — diversification between government bonds and developed market equities — is hard to imagine going forward, given the low level of interest rates. Furthermore, as we have seen recently in times of stress, correlations between apparently diversified assets has tended to 1, as fear sets in.

This is where DAA steps in, using signals based on market outlook as well as investor sentiment to manage risk by allocating to less risky assets in higher risk market regimes and more to growth assets in safer times.

DAA does require investors to embrace a broader set of assets beyond the classic 60/40 mix, often using corporate investment grade and high yield bonds, small-capitalisation and emerging market equities, as well as commodities and alternatives, among others. Potentially, derivative strategies can be used to finesse exposure to target levels and maturities. With this increased complexity comes reduced liquidity relative to the classic mix, as well as higher turnover in asset classes which may be more expensive to transact.

Who is It For?

This approach would benefit investors for whom total portfolio risk is a focus (with less focus on a particular asset class); for example, with defined benefit pension plans or the later stages of a defined contribution target date glidepath where the desire for moderate growth is married with the need for capital preservation.

The fact that DAA solutions can be packaged as funds can make life easier for trustees and sponsors alike, especially those at smaller firms where resources may be limited.

It is important to note that the benefits of DAA also usually accrue over a full market cycle, as the process generally requires a modest risk budget over the SAA and should not be thought of as a high-risk absolute return strategy. As a result, DAA will generally come at a lower cost and display lower volatility.

2. Keeping Risk Below Target By Shifting Between Risky & Lower-Risk Assets

This type of approach involves choosing an appropriate risk level or target and then switching between different levels of risky and non-risky assets (typically cash) to maintain the target risk level.

SSGA's approach to volatility targeting is called Target Volatility Triggers (TVT). TVT strategies can be thought of as a DAA process which allocates between a risky portfolio and cash. The allocation is systematic, based on a forecast of volatility relative to a target level. As such, its extra complexity comes not from new asset classes but from the trading required to adjust the portfolio to the risk target.

TVT strategies are easy to understand as the investor can choose a target level of volatility, and as the strategy simply moves between a portfolio and cash, the cost of entering it should be relatively invariant to market conditions.

However, TVT strategies cannot always anticipate extreme market movements which might cause portfolio volatility to 'spike' on the open. This is when the value on the open of trading changes sharply from the level overnight, effectively defeating the volatility forecast. This can be a problem during very fast falling markets. Such strategies will also generally lag the market in steep rallies, as the allocation to cash takes time to be reduced.

Who is It For?

Investors for whom managing risk is a greater focus than achieving return would benefit from a volatility targeting approach. For example, insurance companies often favour this approach because they can be constrained by risk budgets.

This approach would also benefit investors who may be able to tolerate a degree of variability in their returns but not a large drawdown. Trustees and sponsors of defined benefit plans can find themselves in such a position: they need growth assets to bridge funding gaps, but with liabilities marching ever closer they cannot afford to bear the brunt of market volatility with their funding ratios under major scrutiny. A volatility targeting overlay on their portfolio can offer a cost-effective way of tackling their problem.

3. Protecting Your Portfolio by Rebalancing or Buying Insurance

Some investors need to focus more on protecting their losses than managing their risk. We have two main approaches to achieve this form of loss protection:

1. Option strategies. This is a guaranteed protection strategy where options are used to effectively transfer risk to the option-issuing bank. Think of this like an insurance policy.
2. Managed Target Protection (MTP). This is an SSGA-developed strategy and has been specifically designed with asset management requirements in mind.

Who is It For?

Both these downside protection approaches would benefit investors who have a strong aversion to their asset values falling below a certain level, for example defined contribution cohorts in the retirement phase, where loss aversion starts to kick in very strongly. This approach would also benefit Endowments and Foundations for whom a significant decline in asset value could lead to a removal of their spending capability and an inability to achieve their goals.

Understanding Option Strategies

Options are time-limited products which require investors to choose the level (strike) and duration (maturity) of their protection in exchange for a single upfront payment (premium).

Designing the right strategy involves balancing the following parameters:

1. **Downside protection** What is the level of downside protection below which the investor requires their portfolio to be insulated from market moves?
2. **Upfront cost** What premium can the investor afford to pay?
3. **Upside participation** Is the investor willing to forego some upside participation to lessen the premium?
4. **Maturity and rebalancing** Over what period does the investor require protection? Is this protection a one-off or should it be rolled? If so, should rebalancing be time-dependent or based on some form of trigger?
5. **Strategic or Dynamic?** Should the overlay be rules-based and strategic or dynamically adjust to market conditions?

As an example of how an option overlay might be implemented, consider the zero-premium put-spread collar strategy. This is used by investors who want to protect their downside below a certain level and are willing to give up some upside in return. In this strategy, the investor buys a put near the current market level, and to recoup some of the premium sells a put with a lower strike and a call with a higher strike so that the net premium is zero. The fact that this particular option strategy requires zero premium makes it a popular candidate for a strategic hedge which is kept permanent, though rebalancing.

Compared with the other strategies we have covered, option overlays can involve more operational complexity, with extra documentation, trading accounts, margin funding, and potentially education for end investors. The pricing of options can also be more affected by market conditions and supply/demand dynamics. However, they can fully protect the investor against gap risk, which is something none of the other strategies can guarantee, and their costs and return profiles are known upfront, are realised fully on maturity, and need not be path dependent.

Managed Target Protection

If the investor needs downside protection and is able to tolerate some gap risk then an interesting alternative is the Managed Target Protection strategy (MTP). This strategy has the benefit of being simple to implement, and does not involve the need for any third party.

The strategy involves the risky asset which needs the protection and a risk-free asset, such as cash — similar to the TVT strategy described earlier. The rebalancing between the risky asset and cash is performed in such a way that the total Net Asset Value (NAV) of the strategy, which is the sum of the values of the risky asset and the cash, remains above the desired protection level.

The protection level is typically defined as 85% or 80% of the maximum observed NAV over the past 260 days, rolled daily. This means that there's no issue of a fixed maturity date, as is the case for options. The next element to define is the allowed exposure range of the risk asset. If the investor does not require leverage then the maximum exposure is 100%, at which point the cash exposure would be 0%. The minimum exposure could be in the range of 10–25%, depending how much gap risk the investor can bear.

A further convenient feature of the MTP strategy is that the risky asset can be a simple equity or any portfolio, as long as it has daily liquidity. With options, on the other hand, it may not be possible to have such a wide range of risky assets as the underlying.

The MTP strategy will work well when the market drops as it de-risks. However, similar to the TVT, the strategy will lag in performance when the market rebounds, as the strategy will, at this time, be mostly allocated to cash and it will take time to re-risk.

Choosing Between MTP & Option Protection

The choice between MTP and Option protection rests on several factors, but key among these is how important it is for the investor to guarantee their maximum loss.

MTP is a dynamic rebalancing strategy, like TVT, but with the added feature that rebalancing is triggered not just by changes in forecast volatility, but also by how far the investor's portfolio is from its maximum loss level.

It generally rebalances on at most a daily basis, and so is susceptible to gap risk — the risk that the market opens on one day at a level very different to where it closed the night before. There is no guarantee that MTP will be able to protect the portfolio in such conditions through dynamic rebalancing, and so there is a chance that the investor suffers a greater loss than they feel they can afford.

Gap risk can materialise in two main ways: when the market drops sharply through the protection level; and when the strategy NAV is already sitting on its floor with the minimum risky asset exposure, and risky assets suffer a further loss.

On the other hand, although options provide a guarantee and so insure against gap risk in exchange for an upfront cost, which can be comforting in times of stress, they can sometimes feel like a cost which could be put to better use when the option expires unused or out-of-the-money.

Also, in terms of governance, options involve many more choices than a strategy like MTP where the straightforward main decision variable is the floor, or maximum expected loss, that the strategy should protect against.

The Takeaway?

Each of these downside protection approaches has its own unique implementation implications for portfolios. For an optimal fit, investors need to be clear about their risk and return priorities when choosing one method over another. The decison tree on page 2 can be a useful tool in narrowing down the most appropriate choices, given investor objectives.

The Importance of Downside Protection What is clear, however, is that in an environment of heightened market uncertainty and volatility, investors need to consider the kinds of portfolio guardrails they have in place to withstand market disruptions, in order to achieve their long-term investment objectives.

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