

Getting started on decarbonising your total portfolio

April 2022

Just before COP26, we wrote about what net zero means to those responsible for portfolios with multiple asset classes*. In this paper we address the practical aspects for asset owners and investors of getting on the decarbonisation path and staying on it.

The key tools for decarbonisation

To recap from our net zero paper, there are several key tools available to improve the overall carbon score or reduce the implied temperature rise (ITR)¹ of a multi-asset portfolio. The tools identified were disinvesting from assets with the very worst carbon scores, engaging with issuers, investing in positive climate solutions and using carbon offsets.

However, we recognise this is not just a technical challenge of how to improve your portfolio's carbon score, but also how the investments we make can result in actual decarbonisation.

Steps to get started on the decarbonisation path

In this paper we share how Schroders is decarbonising our multi-asset portfolios and provide real-life examples of this in action. We believe there are three practical steps to improving the portfolio from a climate perspective (taken in the following order):

- 1 Adjust long-term assumptions for climate change
- 2 Improve the temperature alignment of the active components
- 3 Improve the temperature alignment of the passive components

Perhaps somewhat unusually, we believe it is preferable to adjust active components before passive components. This is for a number of reasons. First, as will be seen later, improving the active components can have a more significant impact on the implied temperature rise (ITR) than passive components. Second, specialised passive components can be more costly than standard passive components whereas active ones are typically not. Finally, some passive implementation can be more difficult if derivatives are used extensively. In addition, active managers engage more actively with the companies that they hold/plan to hold in order to improve their decarbonisation approach.

¹ Implied temperature rise (ITR) of an investment portfolio is a forward-looking metric that captures long-term temperature rises, based on the ambitions of global policymakers and companies to tackle climate change.



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1. Adjust long term assumptions

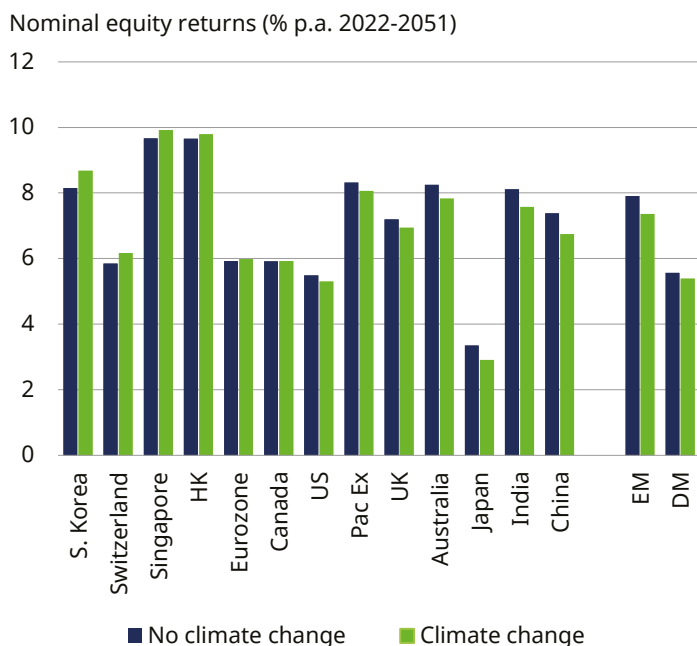
Most asset owners and fiduciaries start with a strategic asset allocation based on historical asset returns, risk and correlations. As we have outlined in our 30-year climate-adjusted capital market assumptions², we believe it is important to consider the changes that transitioning to a low-carbon economy may have on the outlook for asset classes.

When thinking about the impacts of climate change on our long-term asset return assumptions, we take into consideration three scenarios and a 'no climate change' scenario. This latter scenario does not allow for physical and transition risks. The No Action scenario is one in which temperatures are set to rise more than 3°C above pre-industrial levels by the end of the century. Our base case is the Partial Mitigation scenario, where temperature increases are more limited due to the introduction of carbon emission mitigation policies starting from 2025. Finally, we have recently added a Net Zero scenario, in which, thanks to more aggressive mitigation policies, temperature projections are in line with the Paris Agreement.

Overall, accounting for climate change, equities are still expected to outperform other asset classes over the next 30 years. On a regional basis, emerging market equities are expected to outperform most developed equity markets (seen in figure 1) when using a partial mitigation scenario. However, allowing for climate change tends to have a larger impact on emerging markets on average than for developed markets. Meanwhile, our forecasts suggest that credit and property will still deliver better returns than sovereign bonds.

² 30-year return forecasts (2022-51): Part 2, Schroders, January 2022.

Figure 1: When adjusting for climate change, emerging markets lose some of their advantage

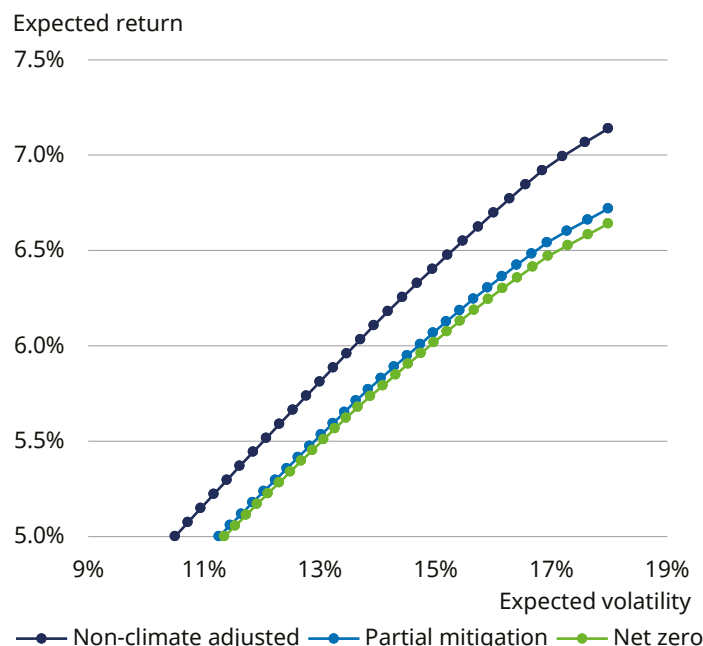


Source: Schroders Economics Group, Cambridge Econometrics, January 2022. Forecasted returns may not be realised and should not be relied upon.

The efficient frontiers for a typical portfolio targeting over 5% p.a. are different when using the 30-year assumptions with and without climate change adjustment (see figure 2). The efficient frontier considering the consequences of climate change cannot achieve the same level of returns because the returns of the riskiest assets are reduced when climate change is considered. In our 30-year assumptions, we do not adjust risk assumptions for assets when allowing for climate change.

We have shown two different climate change scenarios. Due to the uncertain path of decarbonisation, we believe scenario analysis is imperative for asset owners in considering the appropriate impact of changing long-term asset assumptions. Similarly, the Task Force on Climate-Related Financial Disclosures (TCFD) requires Trustees of UK pension funds to 'consider how different investments and strategies could be impacted by transition and physical risks, at an asset class, sector and firm level where appropriate'. The Pensions Regulator in the UK suggests using scenario analysis as a helpful tool.

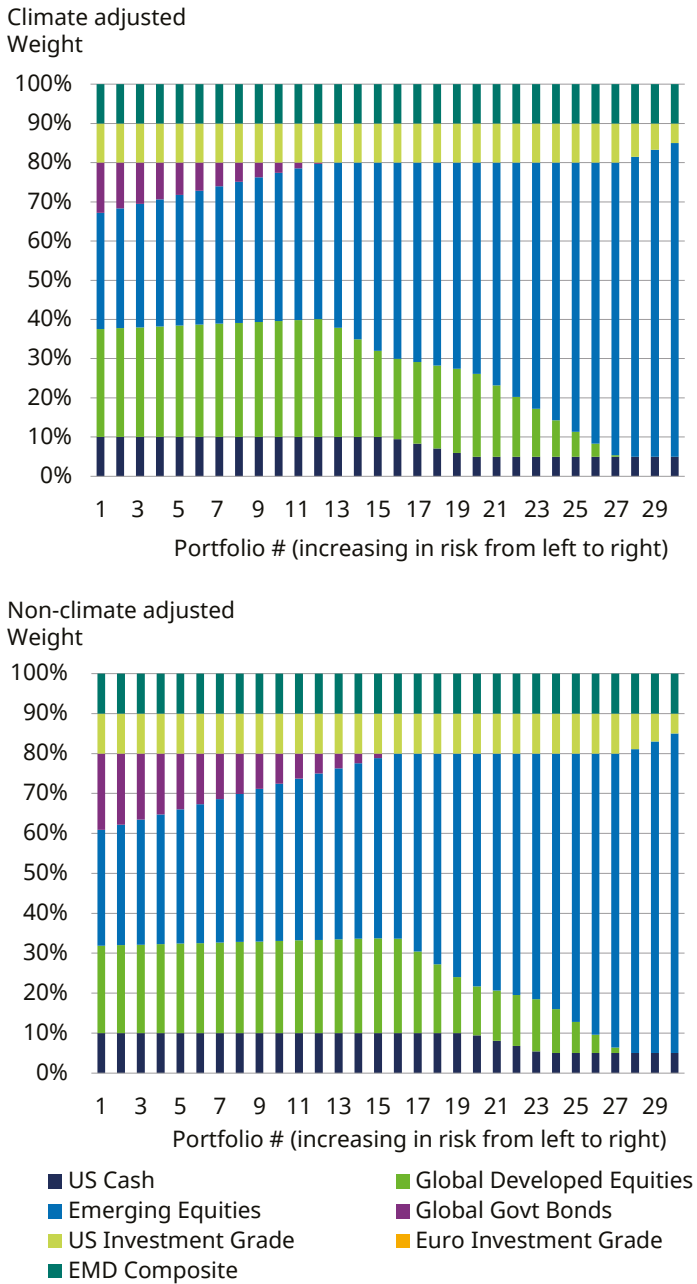
Figure 2: Adjusting returns for climate change results in a new efficient frontier



Source: Schroders, April 2022. Note: Risk is measured as expected volatility of the portfolio returns. An efficient frontier is the portfolios that offer the higher return for a given amount of risk (or the lowest risk for a given amount of return). Returns are in local currency. Efficient frontiers built with a universe of regional equities and bonds, optimised to achieve a minimum return of 5%, with maximum 80% equities, maximum 20% credit, maximum 30% government bonds, and cash between 5% and 10%. For illustration only. The results shown are hypothetical. Forecast and assumptions may not materialise and should not be relied upon to predict future returns.

When we consider climate-adjusted returns, the asset allocation of the portfolio changes. Figure 3 shows that when we adjust returns for climate change without restricting the amount that can be allocated to emerging markets, there is a reallocation of portfolio assets from emerging market equities to developed market equities. This is due to the fact that emerging markets suffer a greater decrease in productivity in higher temperatures.

Figure 3: Portfolio allocation shifts from EM equities to DM equities when returns are adjusted for climate change



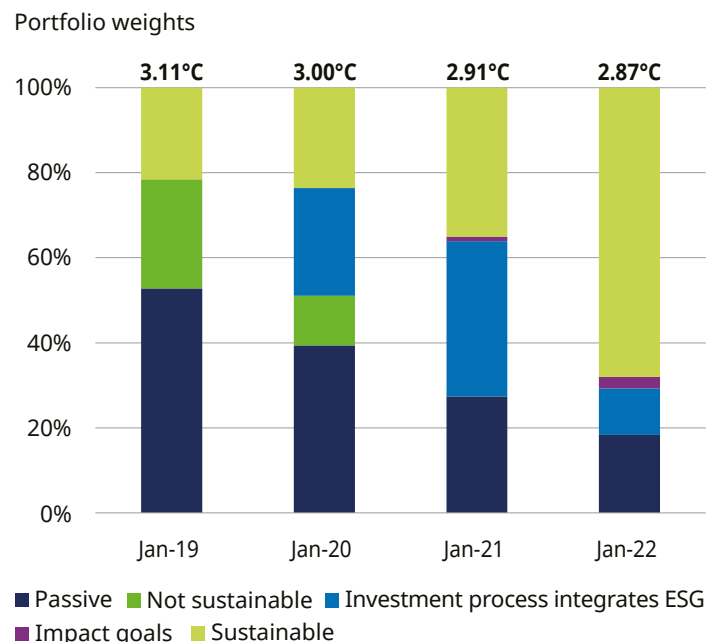
Source: Schroders, April 2022. Note: portfolios built with a universe of regional equities and bonds, optimised to achieve a minimum return of 5%, with maximum 80% equities, maximum 20% credit, maximum 30% government bonds, and cash between 5 and 10%. For illustration only. The results shown are hypothetical. Forecast and assumptions may not materialise and should not be relied upon to predict future results.

2. Improve the temperature alignment of active components

For our multi-asset portfolios that are required to have lower carbon scores than their index benchmarks, we have either changed underlying active managers or worked with existing managers to improve their scores. This is in addition to adjusting our long-term return forecasts.

For example, in one of our multi-asset portfolios we shifted from an active broad global equity fund to an active global sustainable equity fund and sustainable thematic funds (invested in themes such as food and water, and the energy transition). Figure 4 shows how the portfolio weights have shifted from 'not sustainable' components to the majority of holdings being sustainable or ESG integrated over time. Although this article focuses specifically on decarbonisation, the example portfolio we show in Figure 4 has a broader sustainability agenda.

Figure 4: By changing our underlying active components, asset owners can improve portfolio sustainability



Source: Schroders, April 2022. Non-sustainable components assumed ITR of 3.2°C. Integrated and sustainable components assumed ITR of 2.8°C. Impact goals assumed ITR of 2.6°C. Shown for illustrative purposes only and does not guarantee outcomes.

For asset owners with significant numbers of active managers, governance resource will be required to evaluate each manager's current approach to reducing carbon emissions and to judge whether their future approach may meet the asset owner's objectives. This is clearly not a one-off process.

For asset owners with limited time for governance, picking off the managers that manage mandates that are likely to have the biggest impact first, either by type of mandate or percentage allocation in the portfolio, might make sense. We show how to make this decision later in this paper when we analyse a typical portfolio.

3. Improve the temperature alignment of passive components

Asset owners typically hold their passive allocations through one or more of the following:

- ETFs or pooled funds
- Segregated mandates
- Derivatives

To adjust the passive allocations to improve the climate scores in segregated mandates, asset owners will need to work with their passive managers in the same way as for active managers. This will require adjusting the weights of stocks in equity indices for example, by reweighting towards those issuers that have a better climate-alignment. This is, in effect, an active decision as someone will need to make a decision about the methodology required to do this.

Some markets/indices can be more significantly affected by moving to lower carbon versions. Figure 5 shows that by reweighting the FTSE 100 index it is possible to reduce the implied temperature rise from 2.5°C to 2.2°C without increasing tracking error significantly. However, it is not always this easy to achieve such a reduction in temperature alignment. The large proportion of technology companies in the S&P 500 index make it difficult to reduce the ITR of a passive US equity portfolio without compromising tracking error. Figure 6 shows it is difficult to reduce the ITR of S&P 500 from 2.4°C.

Figure 5: Tracking error vs. ITR of FTSE 100

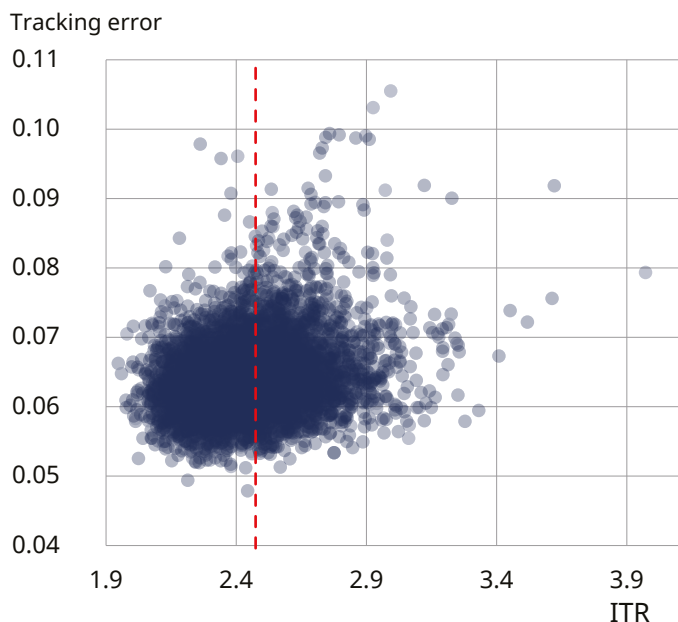
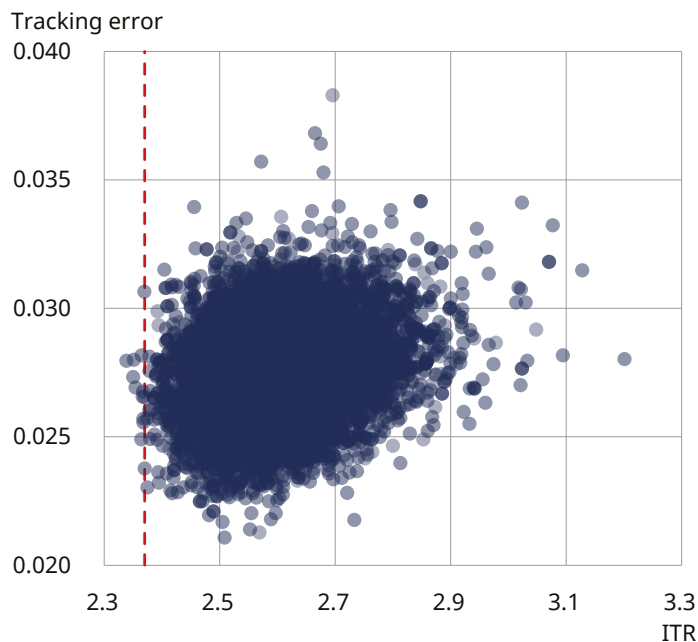


Figure 6: Tracking error vs. ITR of S&P 500



Source: Schroders, March 2022, based on index constituents ITR as of March 2022 using 1yr lookback of daily data to calculate tracking error. Note: Each blue dot is a combination of stock weights, with the corresponding tracking error and ITR calculated; the red line represents index ITR as of March 2022.

For asset owners without segregated passive managers who can design reweighted indices for them, there are exchange traded funds (ETFs) available that can be used to improve the temperature alignment of passive components. Low carbon ETFs exclude or underweight companies that have high emissions or will potentially generate high carbon emissions in the future, while minimising tracking error relative to the original index. However, these 'off-the-shelf' products might not have objectives that suit the asset owners' overall portfolio objectives and are also typically more expensive than standard passive strategies.

For asset owners that use derivatives for their passive exposures, the ability to decarbonise will depend highly on the availability of liquid, climate-friendly versions of commonly used derivatives and there are relatively few available today (examples include MSCI global low carbon target and EuroStoxx 50 low carbon). Investing against these low carbon indices offers a potentially lower cost option than actively managed strategies but the temperature alignment of these derivatives is determined by the methodology underpinning the index construction, which may not align with an asset owner's sustainable investment objectives. It is also worth remembering that often the reason for using derivatives is for efficient portfolio management, for example, implementing asset allocation decisions without having to buy and sell physical assets. Asset owners will have to decide to what extent temporarily held positions in the portfolio should be included in the measurement calculation.

Evaluating the climate impact on a portfolio of making changes

Figure 7 shows an illustrative 60/40 equity bond portfolio that has an implied temperature rise today of around 2.85 °C. We estimate that it is possible to reduce the implied temperature rise of the portfolio as follows:

(1) Adjust long-term assumptions – reducing ITR by 0.02°C.

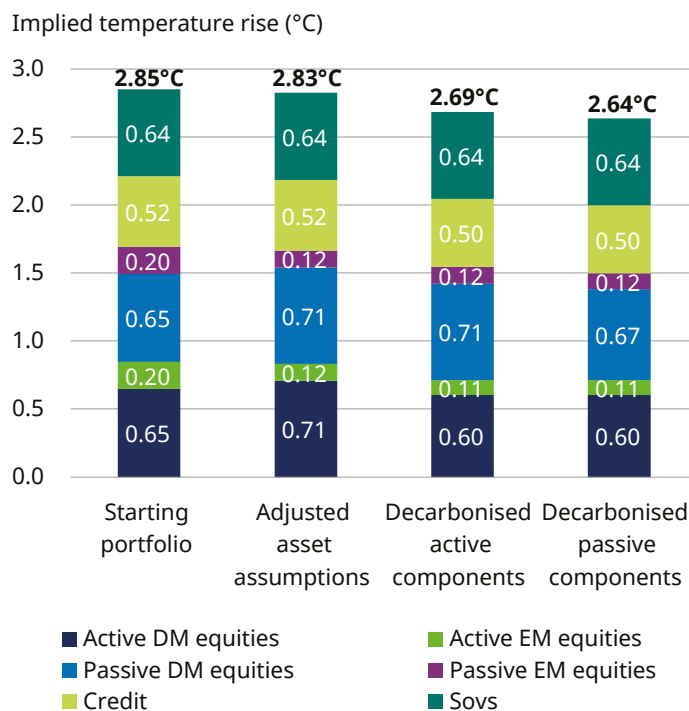
This does not change the ITR of the portfolio components but leads to a re-weighting away from emerging market equities to developed markets in line with the optimisations in section 1.

(2) Improve active components – reduces ITR by 0.14°C

(3) Improve passive components – reduces ITR by 0.05 °C

By taking these three steps, the reduction in implied temperature rise seems disappointing. But today, at this point in time, the amount by which you can improve the climate-alignment of a portfolio *is* quite small. However, by taking these point-in-time actions, we can also set the portfolio up to benefit from a through-time decarbonisation process. In Figure 7, we only decarbonise the equity and credit components. The sovereign component is left unchanged as this cannot currently be measured.

Figure 7: We can reduce the implied temperature rise of a portfolio by taking these 3 steps



Source: Schroders, March 2022. Note: The 'starting portfolio' portfolio has a split of 60% equities (which is 80% DM equities and 20% EM, split 50/50 between active and passive), 20% credit and 20% sovereigns. The other portfolios change the equity split between DM and EM to 90% DM + 10% EM and keep everything else the same. Implied temperature rise (ITR) is calculated using MSCI methodology and the reduction in ITR from left to right is cumulative. Due to lack of ability to measure sovereign bonds accurately today, they are given a default ITR value of 3.2°C throughout, reflecting current estimates of the trajectory of global warming. 'Starting portfolio' implied temperature rises are calculated using passive indices: MSCI World, MSCI EM and Bloomberg Global Corporate. The reduction in ITR for active components is based on a typical ITR of Schroders sustainable funds. Shown for illustrative purposes and should not be viewed as investment guidance.

Juggling multiple objectives

The difficulty for asset owners and asset managers is that we all have multiple objectives – return, risk and climate – and these may not all be aligned over the same timescale. We would hope that over the longer term, focusing on assets that are well positioned for decarbonisation will also result in higher returns. However, as we have seen with recent geopolitical issues, oil and gas and associated investments that are less climate-positive can provide portfolios with significant returns.

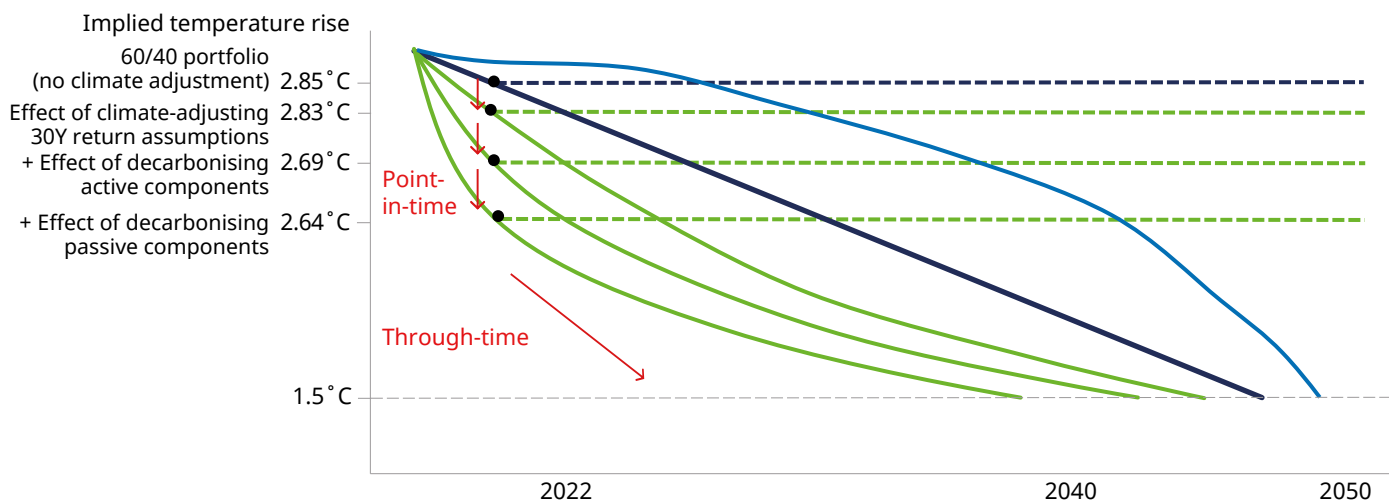
In our previous paper we highlighted some of the impacts on portfolio integrity (such as diversification and risk) when the carbon objective is pushed too far too quickly. An earlier, more aggressive decarbonisation strategy is likely to incur higher transition costs to protect against physical costs. Given the limited number of underlying issuers that have a credible decarbonisation target, an aggressively steep decarbonisation curve will reduce the investment universe drastically, possibly compromising the investment integrity of the portfolio.

We believe it is important to understand the positioning of the portfolio on the trajectory today, and plan on annual reviews of how to continue to improve the positioning to achieve the long-term target. Using the three steps we explained earlier, asset owners can set up their portfolio to benefit from a progressive decarbonisation process as the sustainable investment universe grows. Through time, not only will existing assets decarbonise,

but new assets will become suitable for the portfolio, allowing incremental improvements.

Figure 8 shows the point-in-time decarbonization that can be achieved by a typical portfolio today. However, this is just a small portion of the overall amount of decarbonization that asset owners will need to do over the coming decades.

Figure 8: Asset owners should plan their through-time decarbonisation trajectory



Source: Schroders, April 2022. For illustration only. Forecast may not be realised.

To manage through-time decarbonisation, we believe it is important to understand the system-wide decarbonisation trajectory if investors are to decarbonise their portfolios in an effective and responsible way. We believe the best way to do this is through policy research. Understanding both fiscal and central bank policies on climate change will help investors assess the risks and opportunities that their portfolios face. Policymakers will play a significant role in defining the system-wide decarbonisation trajectory. Understanding this 'benchmark' trajectory will be crucial for investors in understanding how the supply of investable sustainable assets will evolve through time. We will expand further on this topic in a forthcoming paper.

It is also worth noting that inertia may cost returns. Lack of climate friendly investments, at least in the short term, can result in high valuations and reduced long-term returns for example, renewable energy in 2021. Chasing limited supply at any given

point in time, rather than trying to understand what the trajectory of supply of sustainable assets will look like in future, will expose investors to greater sustainability risks. Similarly, seemingly high valuations in the short term could lead investors to avoid certain assets, even if they are positive for the portfolio's climate profile. That again could be sub-optimal for the portfolio's ultimate dual objective: that of portfolio and system-wide decarbonisation while maintaining robust investment characteristics.

Finally, the investment implications of decarbonisation cannot be captured by historical performance of asset classes. Therefore, the decarbonisation objective must be embedded in the construction and frequent review of the portfolio (understanding the limit to point-in-time decarbonisation). Setting a strategy for reducing ITR both now and in the future will help with the management of the new risks and opportunities that will come with system-wide decarbonisation.

Summary

We believe there are three steps asset owners should take to decarbonise their portfolio:

- 1 Adjust long term assumptions for climate change
- 2 Improve the temperature alignment of their active components
- 3 Improve the temperature alignment of their passive components

Asset owners must consider whether these steps are consistent with their governance budget, and the possible impacts they might have on other portfolio objectives and characteristics, such as risk and return.

These three steps will help asset owners to start their decarbonisation journey, even if the change in temperature alignment of the portfolio today is small. More importantly, asset owners will need to plan for how to manage both the risk and opportunities that will come with system-wide decarbonisation. The use of engagement and positive climate solutions will help asset owners to progressively improve their portfolio from a climate perspective until their net zero target is achieved.

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