

How could climate change impact my expected portfolio returns?



More extreme weather is making many investors ask how the potential impact on portfolios can be measured and mitigated. In this new series focused on the big questions for investors, risklab has three ideas for future-proofing your portfolio against climate change – without making radical changes.

The global climate is changing. But uncertainty over how much it will change over the coming years and decades makes it difficult to assess the potential impact on investments. How can you gauge possible future returns if you're unsure how the climate may change – and what that may mean for asset values?

As a starting point, it is worth considering the two major sources of risks associated with climate change: physical risks and transition risks. Physical risks are caused by extreme weather events and higher temperatures. Transition risks are associated with how companies and economies manage to lower greenhouse gas emissions or adapt to climate change's impact.

Both these risks may impact the returns of the main asset classes – equities and bonds – at the broad market and individual security levels.

The potential result? Climate change may lead to reduced investment returns as physical and transition risks lead to higher costs and reduced revenues for many companies. But the impact is likely to differ significantly from firm to firm.

To better plan, it can be helpful to consider a range of possible climate scenarios to assess the risk portfolios are likely to be exposed in the future. These scenarios are not exact projections of the future, but we believe they can help us evaluate climate risks.

Range of climate scenarios

Policymakers and international organisations have developed various climate scenarios that can guide us. The best-known are those from the Intergovernmental Panel on Climate Change, the International Energy Agency and the Network for Greening the Financial System (NGFS), a group of central banks and financial supervisors aiming to accelerate the scaling-up of green finance.

We think the climate scenarios developed by the NGFS are the most useful to quantify climate risk in an investment portfolio. Their advantage is that they incorporate both physical and transition risks. For the purposes of this research, we are focusing on two:



Xiaoye Huang
Investment
Strategist
risklab



Gerold Koch
Head of
Sustainable
Investment Advice
risklab

THE BIG QUESTION: HOW COULD CLIMATE CHANGE IMPACT MY EXPECTED PORTFOLIO RETURNS?

- Orderly climate scenarios assume there is timely and smooth implementation of climate actions. Transition risks are medium in magnitude in these scenarios. In the Net Zero 2050 scenario, the world achieves the greenhouse gas reduction goals of the Paris Agreement.
- The Disorderly climate scenario involves an uncoordinated transition where policy responses differ across countries, with the transition not beginning until 2030 (Delayed Transition). This involves high transition risks. Both the Orderly and Disorderly scenarios assume that temperature rises by 2050 are limited and physical risks are kept in check.

Quantifying climate risk

Looking across these scenarios, we have developed a methodology to quantify the impact of climate risk on portfolio returns in the various climate scenarios. We call our analysis Climate Navigator.

Our findings show climate change will affect asset class returns on two levels. First, the performance of each asset class is subject to developments in individual economies that can impact macroeconomic and financial factors. Second, companies have different business models, sources of revenue and costs, so company-specific climate costs play an important role in determining the returns of individual stocks and corporate bonds. For example, a utility company generating a significant proportion of its revenue from thermal coal power generation could face a significantly higher cost of transition than a competitor that uses wind as its main power source.

Based on our in-depth analysis of climate risk, we have projected returns for a broad range of asset classes. Here, we'll focus on euro zone bonds and equities assuming targets agreed at the 2015 Paris Agreement

NEED TO KNOW

Q How much climate risk is currently reflected in market prices?

A Each country signed up to the Paris Agreement must detail its climate action plan to cut greenhouse gas emissions and adapt to climate impacts. Economies and companies are incorporating these pathways in their forecasts, so we assume their impact is starting to be priced in by the market. However, the pricing of climate risk will evolve as global warming, extreme weather events, climate policy, green technology, and other factors influencing financial markets change over time.

are broadly met for two of the NGFS scenarios – Net Zero 2050 and Delayed Transition.

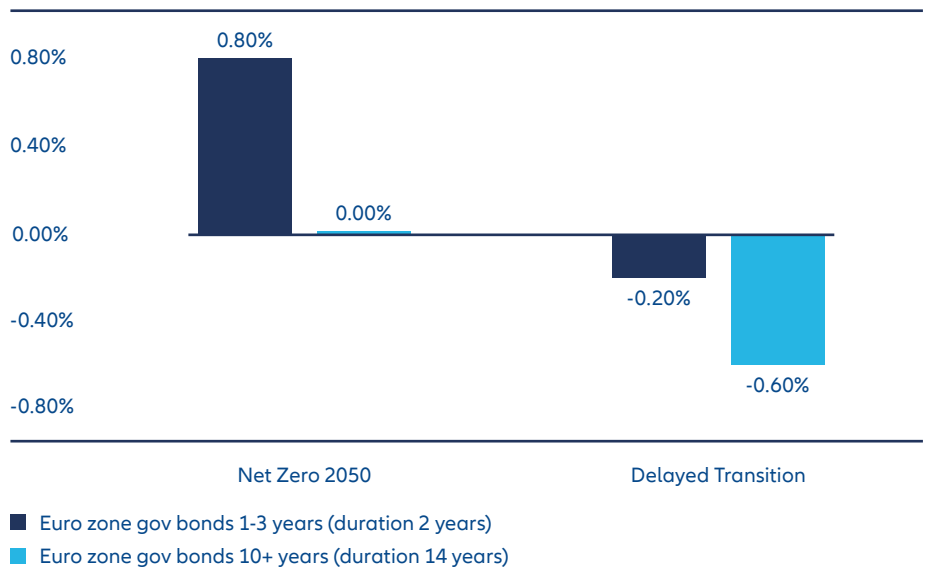
Analysing climate impact on returns

According to our analysis, the best outcome for euro zone fixed income returns would be for the world to achieve the greenhouse gas reduction goals of the Paris Agreement by 2050 (Net Zero 2050). Transitioning

to a lower-carbon world is expected to impact the economy under all scenarios, with a negative effect on GDP growth and a rise in inflation and higher long-term interest rates affecting bond returns. However, the economic impact will likely be more pronounced under the Delayed Transition scenario. For equities, the results outlook is negative for both scenarios, as we explain below.

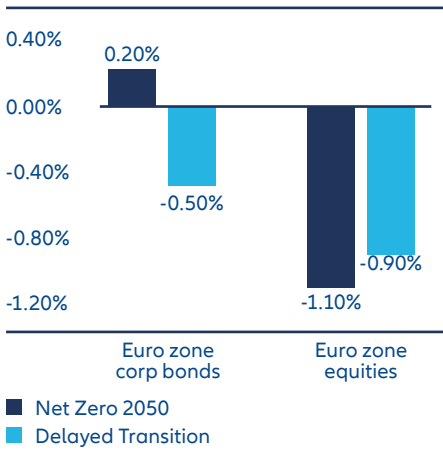
Exhibit 1: Euro zone government bond returns are likely to be better if the world meets Net Zero 2050

Change in expected annual return over the next 10 years



Source: Holdings data from Allianz Global Investors as of 29 September 2023. Input data from **NGFS Scenarios Portal** and MSCI as of 30 November 2023. Forecasts do not predict future returns. Future performance is subject to taxation which depends on the personal situation of each investor and which may change in the future. The hypothetical performance and simulations shown are for illustrative purposes only and do not represent actual performance; they do not predict future returns. Please see important information above the end disclaimer. The statements contained herein may include statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. We assume no obligation to update any forward-looking statement.

Exhibit 2: Euro zone corporate bonds are expected to fare better than equities
Change in expected annual return over the next 10 years



Source: Holdings data from Allianz Global Investors as of 29 September 2023. Input data from **NGFS Scenarios Portal** and MSCI as of 30 November 2023. Forecasts do not predict future returns. Future performance is subject to taxation which depends on the personal situation of each investor and which may change in the future. The hypothetical performance and simulations shown are for illustrative purposes only and do not represent actual performance; they do not predict future returns. Please see important information above the end disclaimer. The statements contained herein may include statements of future expectations and other forward-looking statements that are based on management’s current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. We assume no obligation to update any forward-looking statement.

Continued from overleaf

• *Euro zone government bonds* – Under both scenarios, the main factors determining government bond returns are coupon income – known as carry – and the valuation. In the Net Zero 2050 scenario, interest rates rise more immediately than under Delayed Transition, giving investors the opportunity to reinvest maturing bonds at a more favourable rate over a longer time period, boosting expected returns. The later rise in interest rates under Delayed Transition lowers the potential opportunity for carry, leading to a bigger hit to returns. In both

scenarios, longer-term bonds see the largest negative impact on returns as they have higher sensitivity to interest rates.

- *Euro zone corporate bonds* – We expect returns to perform best in the Net Zero 2050 scenario (see Exhibit 2) as the path of interest rates would be higher than in the Delayed Transition. The earlier rise in rates would allow more opportunity to reinvest maturing bonds at a higher interest rate (as in the case of euro zone government bonds). But the company-specific climate risks inherent in corporate bonds mean anticipated returns are likely to be lower than for government bonds.
- *Euro zone equities* – Our findings show equities are likely to face a bigger hit to returns than bonds (see Exhibit 2). This is because company-specific risks are usually higher for stocks than for corporate bonds as we assume that equity shareholders will generally have to foot much of the bill for future climate costs.

Overall, our analysis suggests that government bond returns are likely to hold up better in the face of climate change than equities or corporate bonds.

Reducing the impact of climate risk on an investment portfolio

Whichever scenario prevails, we believe that risks associated with climate change are likely to result in reduced asset class return expectations. As such, portfolio returns may be negatively affected over the coming years and decades. How can investors respond? In our view, there are three choices to reduce the climate risk that an investment portfolio is exposed to. We take the Delayed Transition scenario as our basis for considering the options as we consider this the most likely outcome at the current time.

1. Adjust the portfolio’s allocation

An important step in building a portfolio is optimisation, the aim of maximising net gains depending on risk tolerance. One way this could be done is by adjusting the portfolio allocation to incorporate climate risks. Given our analysis above on the relative performance of asset classes in the face of climate change, this could mean adding more government bonds. Such a move may help to bolster the portfolio’s resilience but would require a substantial shift to government bonds.

2. Alter the interest rate sensitivity

A second possibility would be to reduce the interest rate sensitivity of the portfolio’s fixed income holdings by lowering the duration. Interest rates are expected to rise in the longer term due to the higher demand for capital resulting from the investment spurred by the energy transition.

However, shortening a portfolio’s overall duration from medium term to short term would lead only to a moderate change in its interest rate sensitivity. What’s more, for liability-driven investments with long-term liabilities, shortening the

NEED TO KNOW

Q What are climate-aware strategies?

A Such strategies are designed to help investors reflect the changing risks posed by climate change in their portfolios – with a view to benefiting potential returns. They incorporate specific carbon reduction targets and objectives related to the transition to a low-carbon economy through the selection and weighting of underlying constituents.

duration would potentially make it more difficult to safeguard the funding ratio, the difference between available assets and liabilities.

3. Use climate-aware investment approaches

The third option is to keep the portfolio's asset allocation and interest rate sensitivity unchanged but switch to climate-aware strategies within each asset class. This could involve reducing the proportion of high emitters from sectors such as energy and utilities or lowering the portfolio's effective carbon footprint in all sectors. The starting point for this approach

would be following a certain greenhouse gas emission reduction pathway over time, which would naturally increase the weight in companies with lower future climate costs, or taking climate risk-related metrics explicitly into account in the construction of the benchmark. When adopting this approach it is important to avoid significant deviations in sector weights and idiosyncratic risks, such as excessive concentration in a single company's stocks or bonds.

Adopting this kind of climate-aware investment approach may not compensate for the return shortfall

completely. But it might help to reduce it without changing the asset allocation substantially. We think this option might be the easiest to adopt.

Quantifying the potential impact of climate change on portfolio returns is indeed one of the big questions for investors. Our findings show that, over the next 10 years, the effect of climate change on economies and companies may weigh on expected portfolio returns. But there are potential answers: our analysis of potential climate scenarios can help you begin to future-proof your portfolio without making radical changes.



CASE STUDY

Helping a pensions provider protect returns and build a sustainable portfolio

SITUATION →

Goal: reflect emerging risks of climate change in portfolio and benefit potential returns without making substantial allocation change.

SOLUTION →

Helping client plan for a range of climate scenarios using risklab's Capital Markets Model that takes account of climate risks across asset classes and their potential portfolio impact.

Supporting client in moving its equity portfolio to a climate transition benchmark to aid its decarbonisation ambitions and help address climate risks.

RESULT →

Outcome for client's strategic asset allocation:

- 1 Better expected outlook for returns.
- 2 Reduced carbon footprint, based on transparency on climate risk in portfolio.
- 3 Definition of a decarbonisation pathway aligned with climate transition goals.

The statements contained herein may include statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. We assume no obligation to update any forward-looking statement. Back-testings and hypothetical or simulated performance data have many inherent limitations, only some of which are described as follows:(i) They are designed with the benefit of hindsight, based on historical data, and do not reflect the impact that certain economic and market factors might have had on the decision-making process, if a client's portfolio had actually been managed. No back-testings, hypothetical or simulated performance can completely account for the impact of financial risk in actual performance.(ii) They do not reflect actual transactions and cannot accurately account for the ability to withstand losses.(iii) The information is based, in part, on hypothetical assumptions made for modelling purposes that may not be realised in the actual management of portfolios. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. Assumption changes may have a material impact on the model returns presented. The back-testing of performance differs from actual portfolio performance because the investment strategy may be adjusted at any time, for any reason. Investors should not assume that they will experience a performance similar to the back-testings, hypothetical or simulated performance shown. Material differences between back-testings, hypothetical or simulated performance results and actual results subsequently achieved by any investment strategy are possible.



risklab is the global advisory and solutions capability of Allianz Global Investors, with more than 50 investment professionals based around the world. risklab advises clients on the optimal asset mix for their level of risk appetite, asset class preferences, liquidity requirements and other factors.

Investing involves risk. The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security.

The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction or transmission of the contents, irrespective of the form, is not permitted.

This material has not been reviewed by any regulatory authorities. In mainland China, it is for Qualified Domestic Institutional Investors scheme pursuant to applicable rules and regulations and is for information purpose only. This document does not constitute a public offer by virtue of Act Number 26.831 of the Argentine Republic and General Resolution No. 622/2013 of the NSC. This communication's sole purpose is to inform and does not under any circumstance constitute promotion or publicity of Allianz Global Investors products and/or services in Colombia or to Colombian residents pursuant to part 4 of Decree 2555 of 2010. This communication does not in any way aim to directly or indirectly initiate the purchase of a product or the provision of a service offered by Allianz Global Investors. Via reception of this document, each resident in Colombia acknowledges and accepts to have contacted Allianz Global Investors via their own initiative and that the communication under no circumstances does not arise from any promotional or marketing activities carried out by Allianz Global Investors. Colombian residents accept that accessing any type of social network page of Allianz Global Investors is done under their own responsibility and initiative and are aware that they may access specific information on the products and services of Allianz Global Investors. This communication is strictly private and confidential and may not be reproduced, except for the case of explicit permission by Allianz Global Investors. This communication does not constitute a public offer of securities in Colombia pursuant to the public offer regulation set forth in Decree 2555 of 2010. This communication and the information provided herein should not be considered a solicitation or an offer by Allianz Global Investors or its affiliates to provide any financial products in Brazil, Panama, Peru, and Uruguay. In Australia, this material is presented by Allianz Global Investors Asia Pacific Limited ("AllianzGI AP") and is intended for the use of investment consultants and other institutional /professional investors only, and is not directed to the public or individual retail investors. AllianzGI AP is not licensed to provide financial services to retail clients in Australia. AllianzGI AP is exempt from the requirement to hold an Australian Foreign Financial Service License under the Corporations Act 2001 (Cth) pursuant to ASIC Class Order (CO 03/1103) with respect to the provision of financial services to wholesale clients only. AllianzGI AP is licensed and regulated by Hong Kong Securities and Futures Commission under Hong Kong laws, which differ from Australian laws.

This document is being distributed by the following Allianz Global Investors companies: Allianz Global Investors GmbH, an investment company in Germany, authorized by the German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin); Allianz Global Investors (Schweiz) AG; Allianz Global Investors UK Limited, authorized and regulated by the Financial Conduct Authority; in HK, by Allianz Global Investors Asia Pacific Ltd., licensed by the Hong Kong Securities and Futures Commission; in Singapore, by Allianz Global Investors Singapore Ltd., regulated by the Monetary Authority of Singapore [Company Registration No. 199907169Z]; in Japan, by Allianz Global Investors Japan Co., Ltd., registered in Japan as a Financial Instruments Business Operator [Registered No. The Director of Kanto Local Finance Bureau (Financial Instruments Business Operator), No. 424], Member of Japan Investment Advisers Association, the Investment Trust Association, Japan and Type II Financial Instruments Firms Association; in Taiwan, by Allianz Global Investors Taiwan Ltd., licensed by Financial Supervisory Commission in Taiwan; and in Indonesia, by PT. Allianz Global Investors Asset Management Indonesia licensed by Indonesia Financial Services Authority (OJK).

"risklab / risklab" are trademarks which are registered in the United States of America (USA), the European Union (EU), Hong Kong and various other jurisdictions. Legal owner of the aforementioned trademarks is Allianz Global Investors GmbH, a German capital management company (Kapitalverwaltungsgesellschaft) registered with Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) under the German Capital Management Act (KAGB) which is also licensed as a provider of financial services in Germany. Registration of this trade mark shall give no right to the exclusive use of the word RISK, or of the word LAB, each separately and apart from the mark.