

Capital market assumptions with climate risks

Framework overview and outcomes

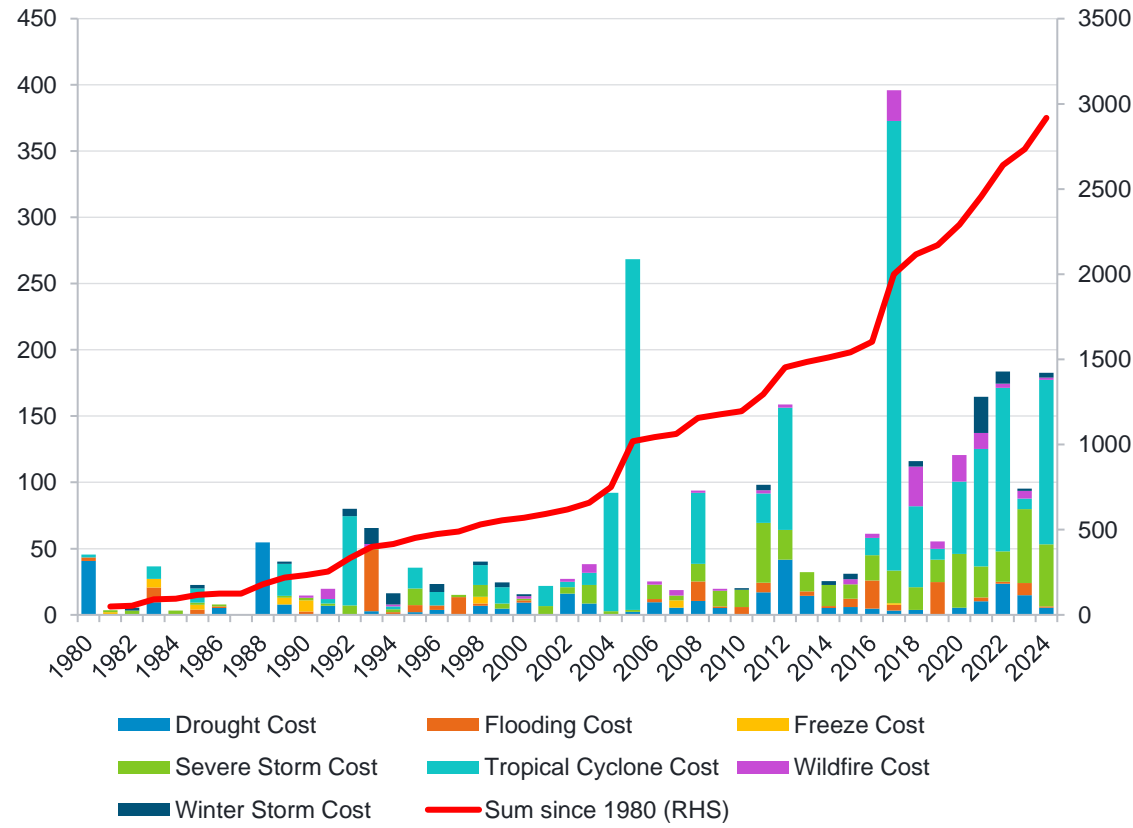
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Director, Global Macro and Strategic Asset Allocation

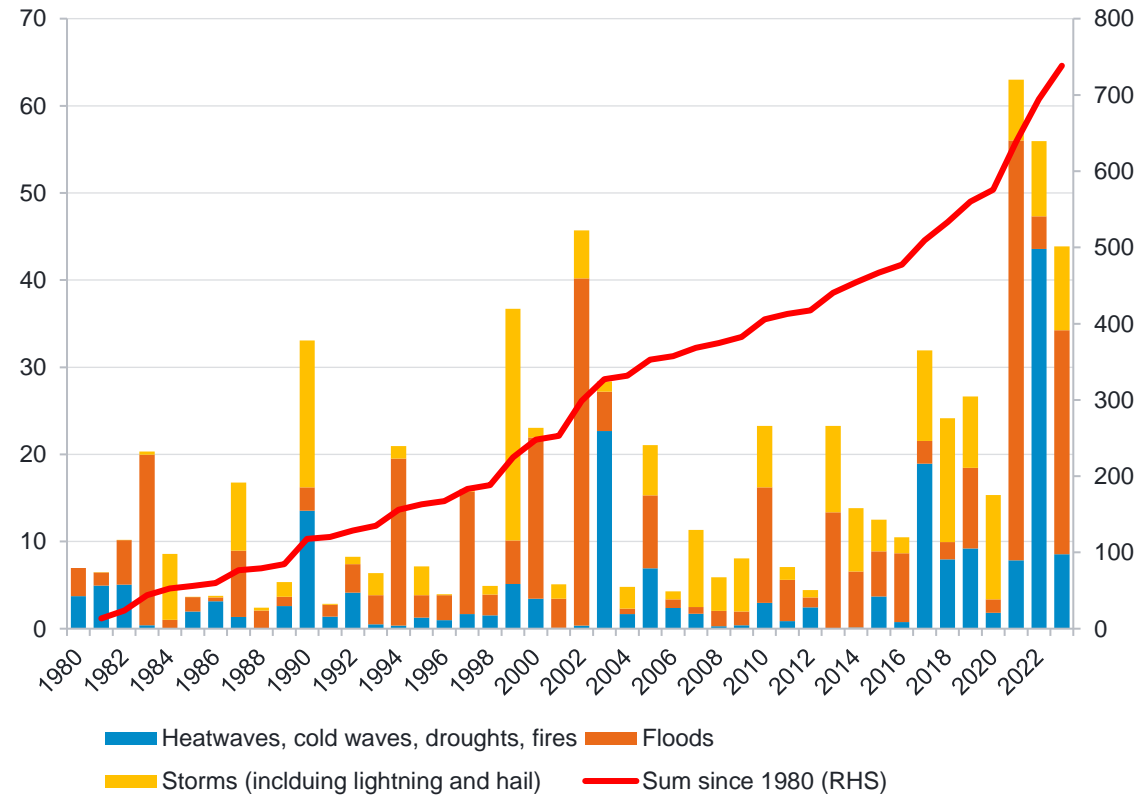
May 25

Economic damage due to climate change is already substantial and increasing

Economic losses due to climate disasters in US (\$, billion)

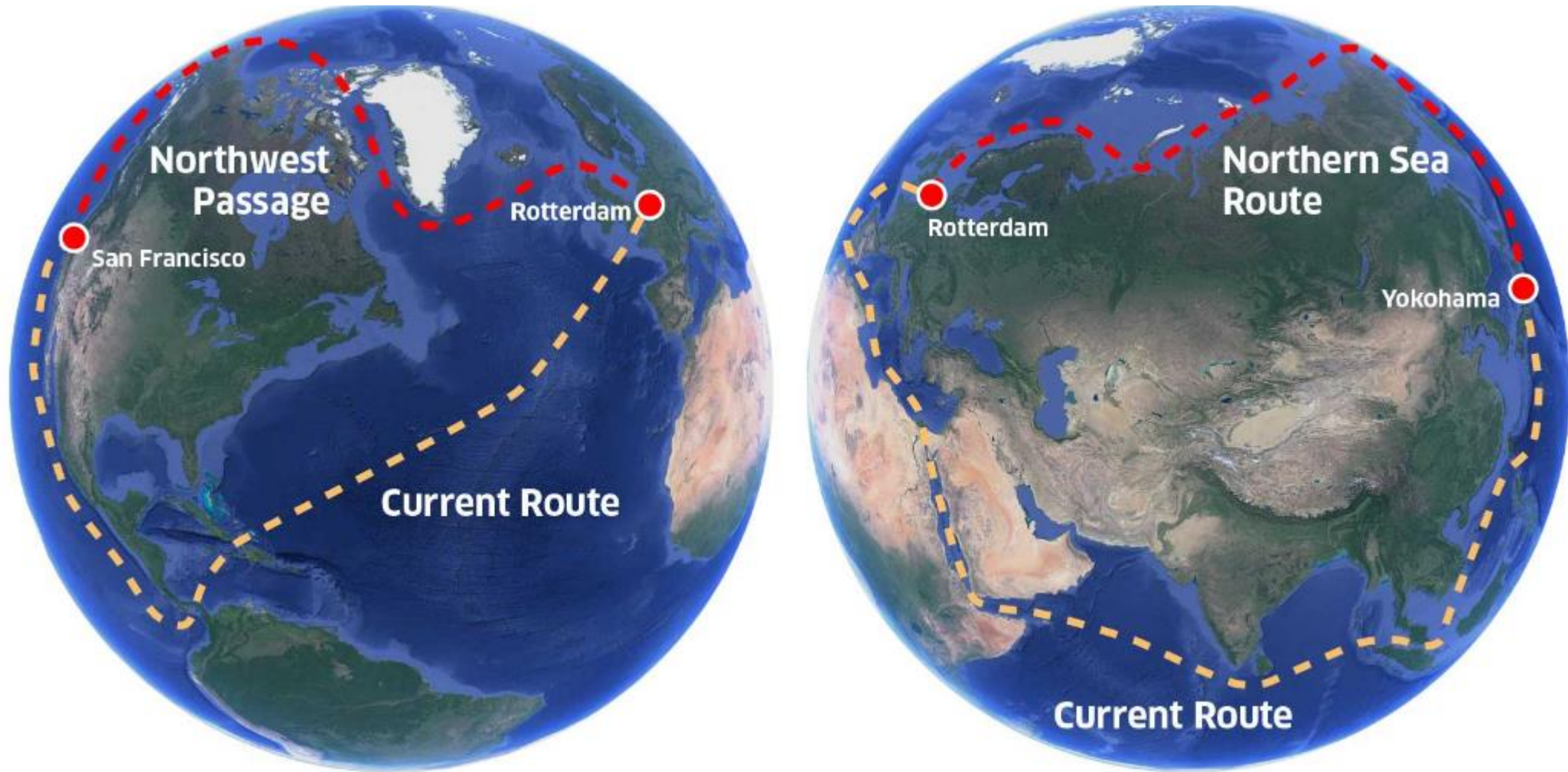


Economic losses due to climate disasters in EU (€, billion)



Source: National Centres for Environmental Information, European Environment Agency, Fidelity International. For illustrative purposes only

Climate change is contributing to shape the new geopolitical landscape



Source: Royal Geographical Society

Several uncertainties make modelling climate change challenging

Multi-dimensional problem

- **Multiple risks:** climate, economic, financial + compounding
- **Multiple actors:** public sector, private sector, households



Many uncertainties...

- Uncharted territory with rising **temperatures**
- **Energy** transition
- Fiscal, policy, firms, households' **reaction functions**
- Lack of **historical data**



Climate risks might not be priced in (correctly) today

Fundamental questions and assumptions...

- Will policy makers implement **effective measures** to fully achieve Net Zero **by 2050**?
- If transition is **delayed**, will measures be implemented before the **10-year horizon** used for SAA purposes?
- Will investors **price in climate disasters** that will potentially happen in the long term (even beyond 2050, if no action is taken)?



Climate risks will likely affect the
risk/return efficient frontier

NGFS phase 5 climate scenarios

From an ‘orderly transition’ to a ‘fragmented world’

Category	Scenario	Policy ambition	Policy reaction	Technology change	Carbon dioxide removal	Regional policy variation
Orderly	Low demand	1.1°C	Immediate	Fast change	Medium use	Medium variation
	Net Zero 2050	1.4°C	Immediate	Fast change	Medium-high use	Medium variation
	Below 2°C	1.8°C	Immediate and smooth	Moderate change	Medium use	Low variation
Disorderly	Delayed Transition	1.7°C	Delayed	Slow/fast change	Medium use	High variation
Hot House	Nationally Determined Contributions (NDC)	2.3°C	NDCs	Slow change	Low use	Medium variation
	Current policies	3.0°C	None-current policies	Slow change	Low use	Low variation
Too-little-too-late	Fragmented world	2.4°C	Delayed and fragmented	Slow/fragmented change	Low/medium use	High variation
		Physical risk	Transition risk			

Lower macro-financial risk

Moderate macro-financial risk

Higher macro-financial risk

Source: NGFS, November 2024.

Our approach to modelling climate change impact on asset prices

Leveraging bottom-up and top-down information

Qualitative inputs

1. Corporate action
2. Technology innovation
3. Policy action

➤ What is the probability of each climate scenario?



Quantitative inputs

1. GDP growth
2. Inflation rate
3. Policy rate

➤ What is the impact on the economy?



**Macro-financial
Fidelity CMA model**

**Climate-aware
capital market assumptions**

Source: Fidelity International. For illustrative purposes only.

Understanding the transition to net-zero through its 'enablers'

Corporate action

14%

of companies in our coverage that have committed to targets aligned to achieve net zero by 2050

Technological change

20/30%

of world's energy comes from low-carbon energy sources

Policy action

23%

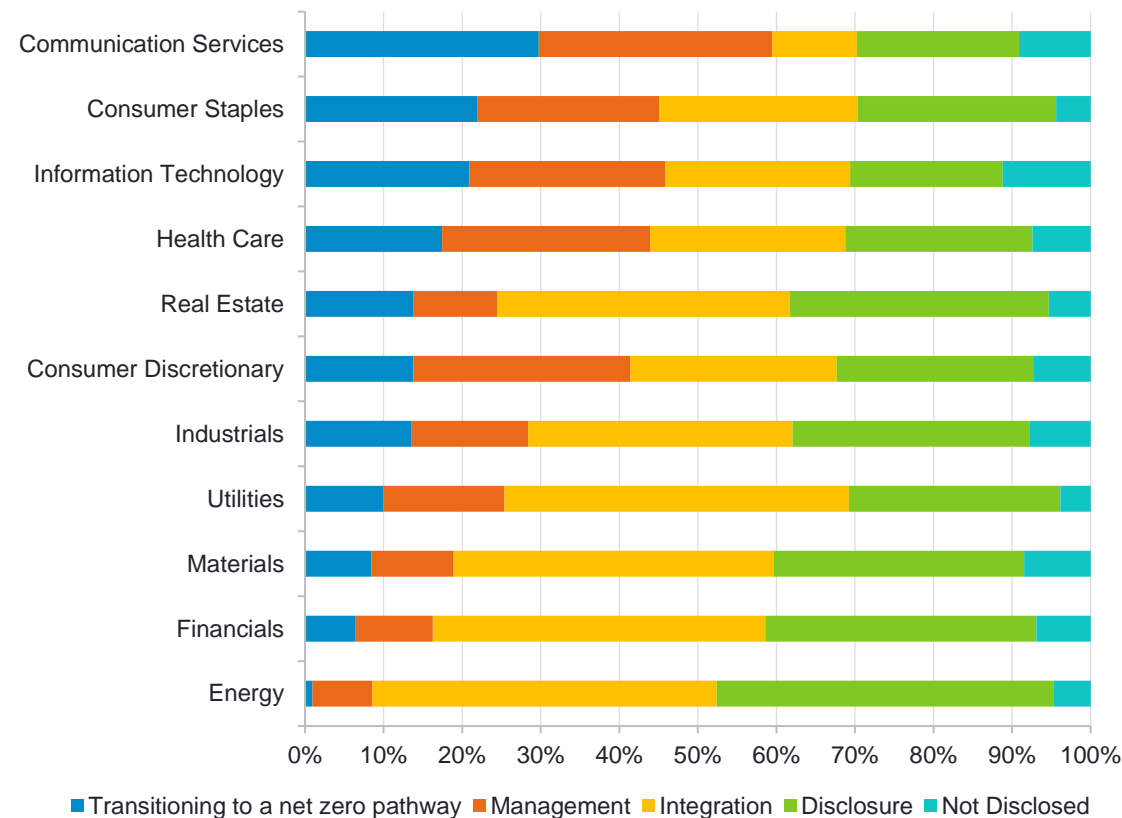
of world's of global GHG emissions covered by carbon pricing initiatives

➤ **Given current information, the disorderly transition/fragmented world are the most likely scenarios.**

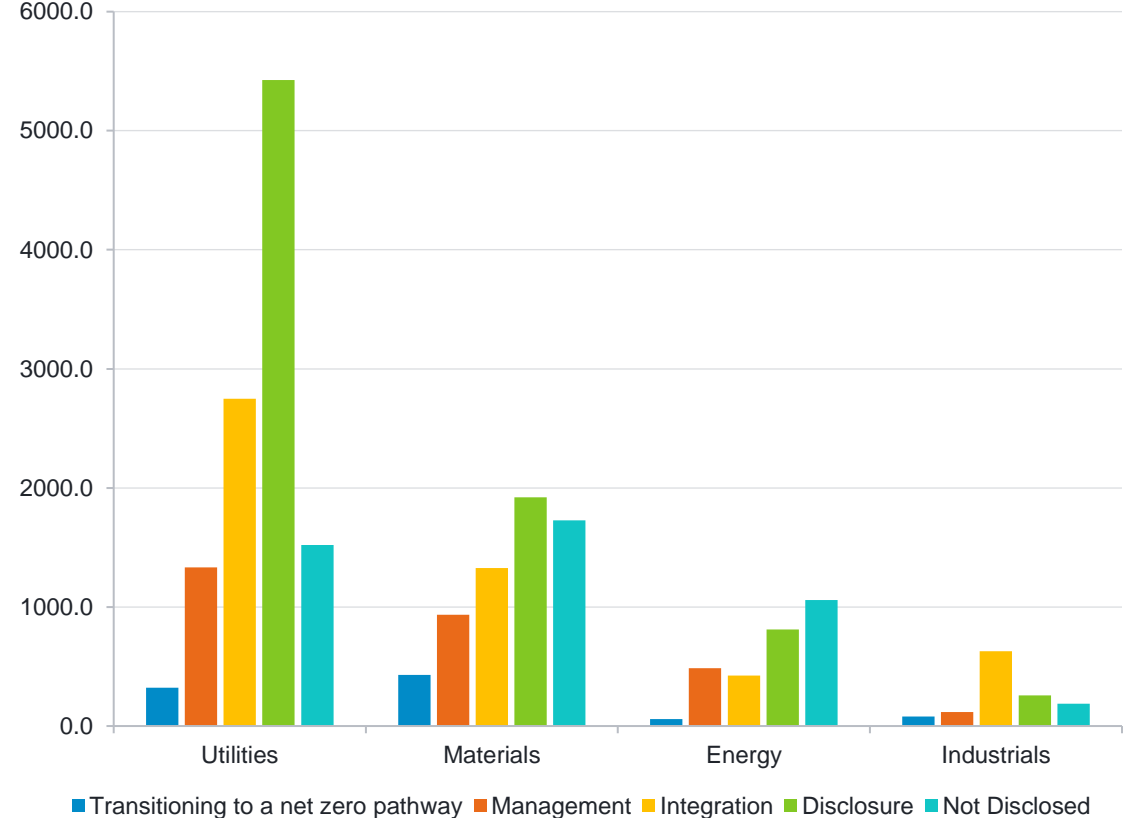
Source: Fidelity International, UNFCCC, World Bank. For illustrative purposes only.

Fidelity Climate Ratings for Global DM equities

Fidelity Climate Ratings by sector

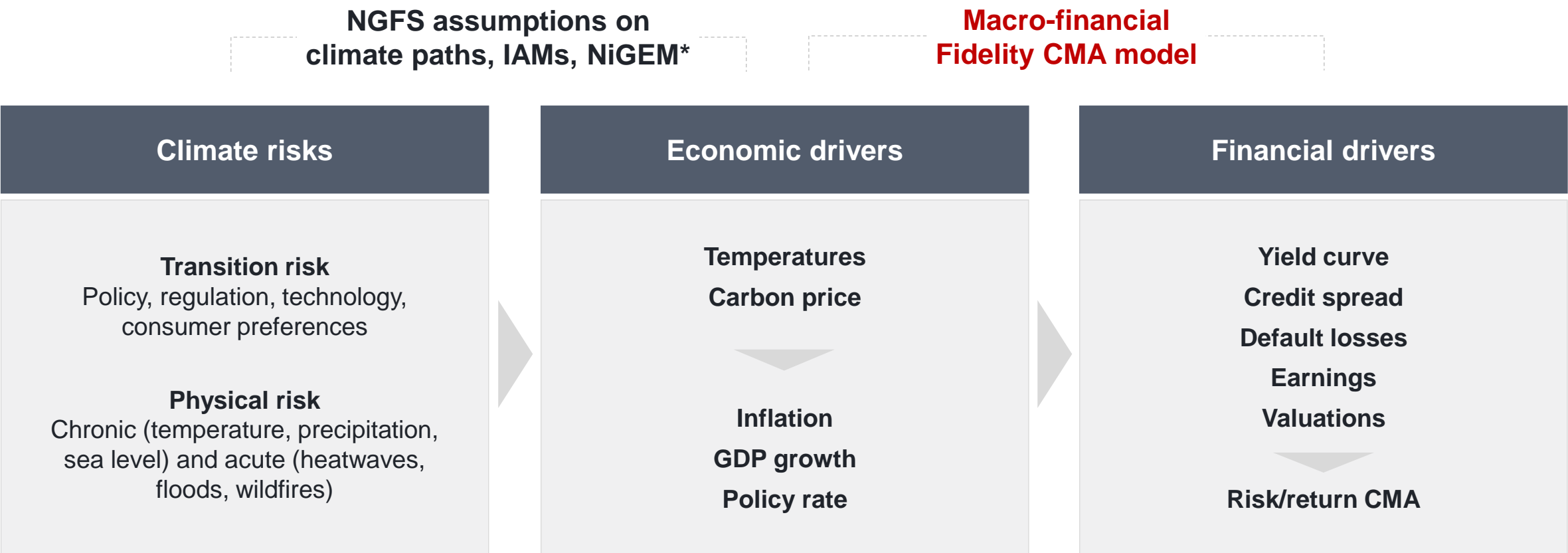


Top GHG emitter sectors (Scope 1&2 GHG per sales)



Source: Fidelity International. For illustrative purposes only.

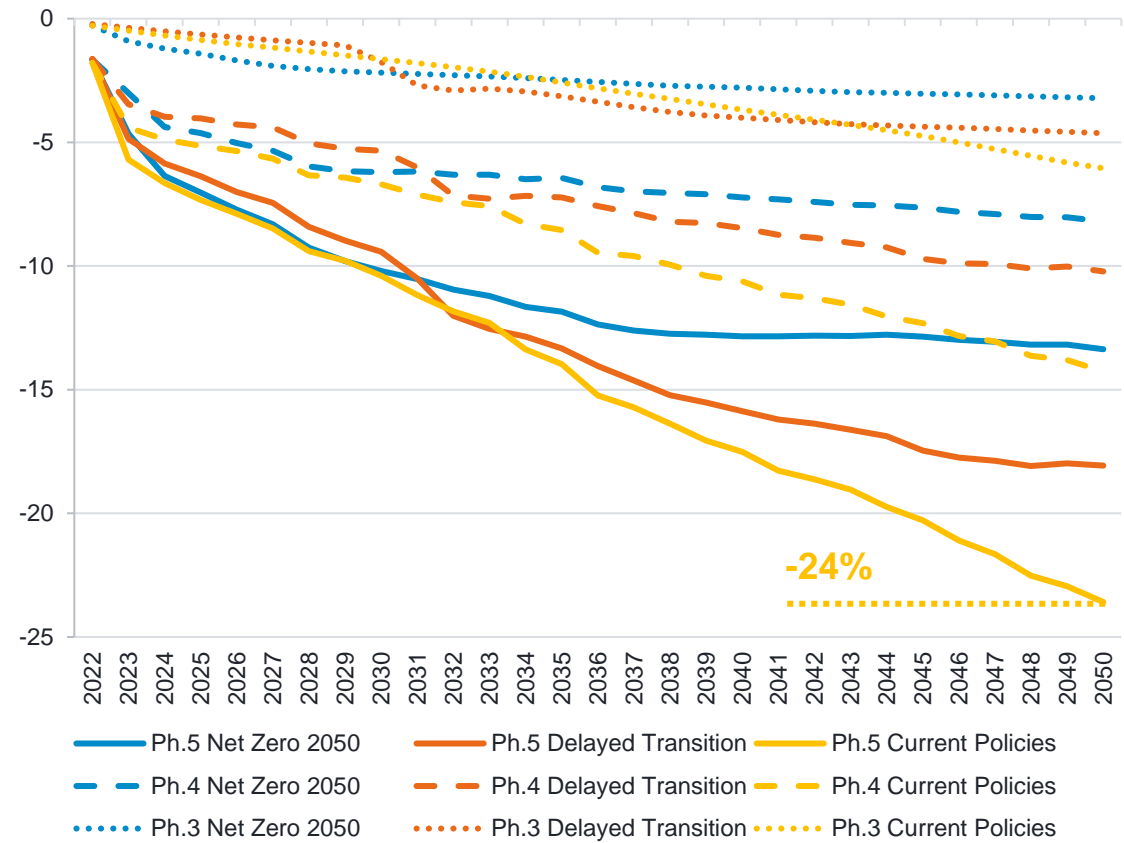
From climate risks to financial risks



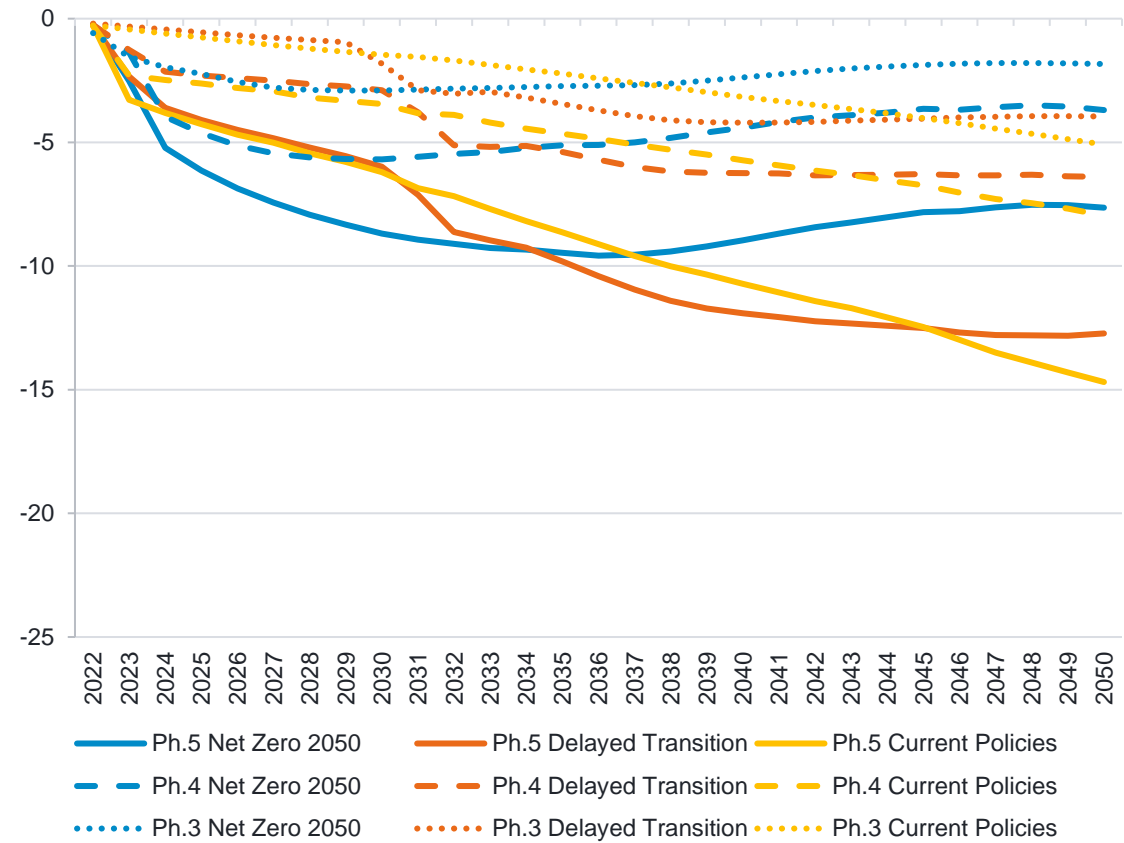
Source: Fidelity International, 2025. For illustrative purposes only. *NGFS modelling includes integrated assessment models (IAMs), Kalkuhl & Wenz (KW) damage function, and National Institute Global Econometric Model (NiGEM).

Climate change will likely strongly impact economic growth

GDP, World (% deviation from baseline, 99th pct acute risks)



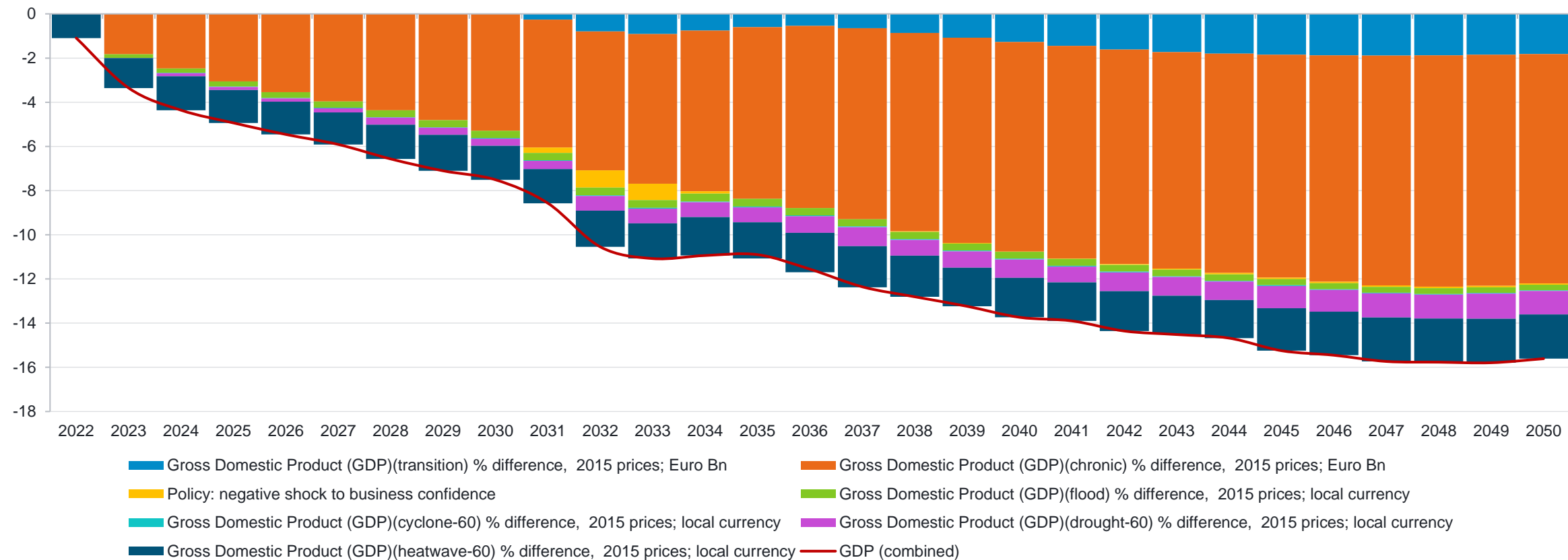
GDP, U.S. (% deviation from baseline, 99th pct acute risks)



Source: NGFS, Fidelity International, 2025. For illustrative purposes only.

GDP impact (Delayed Transition, Spain) due to climate change

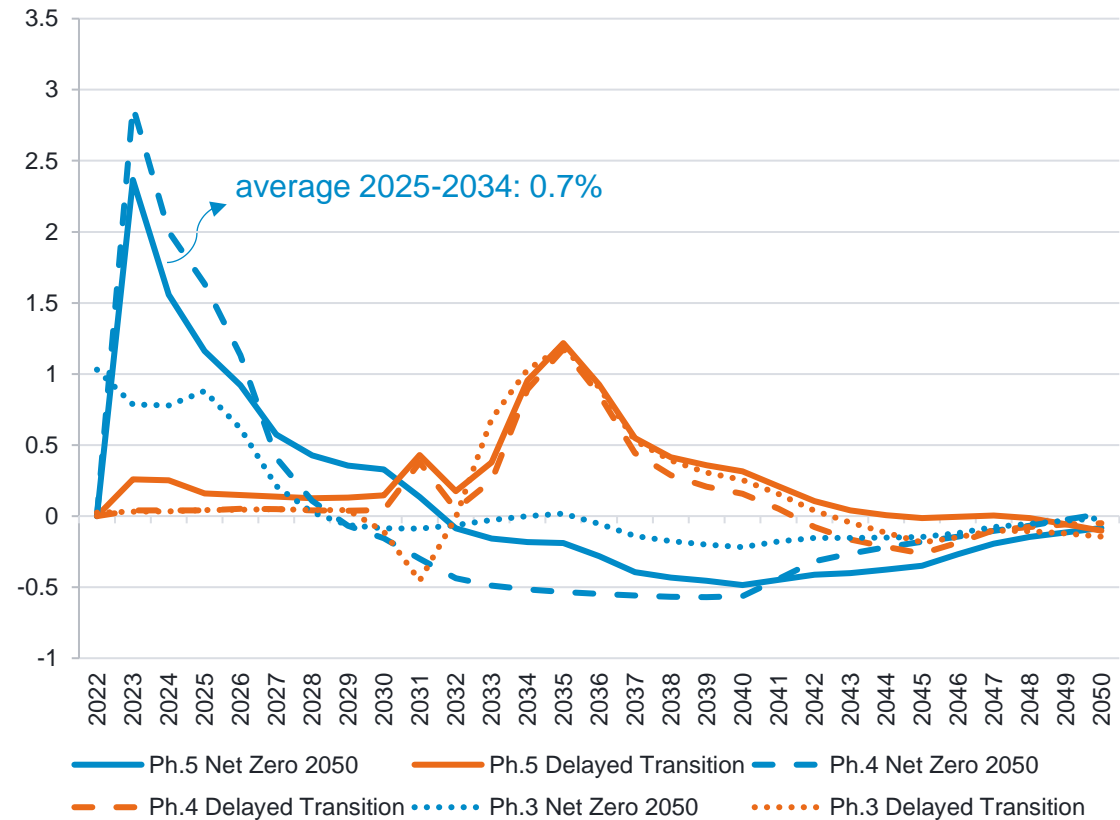
GDP % deviation from baseline, Spain, 60th percentile acute risks, phase V



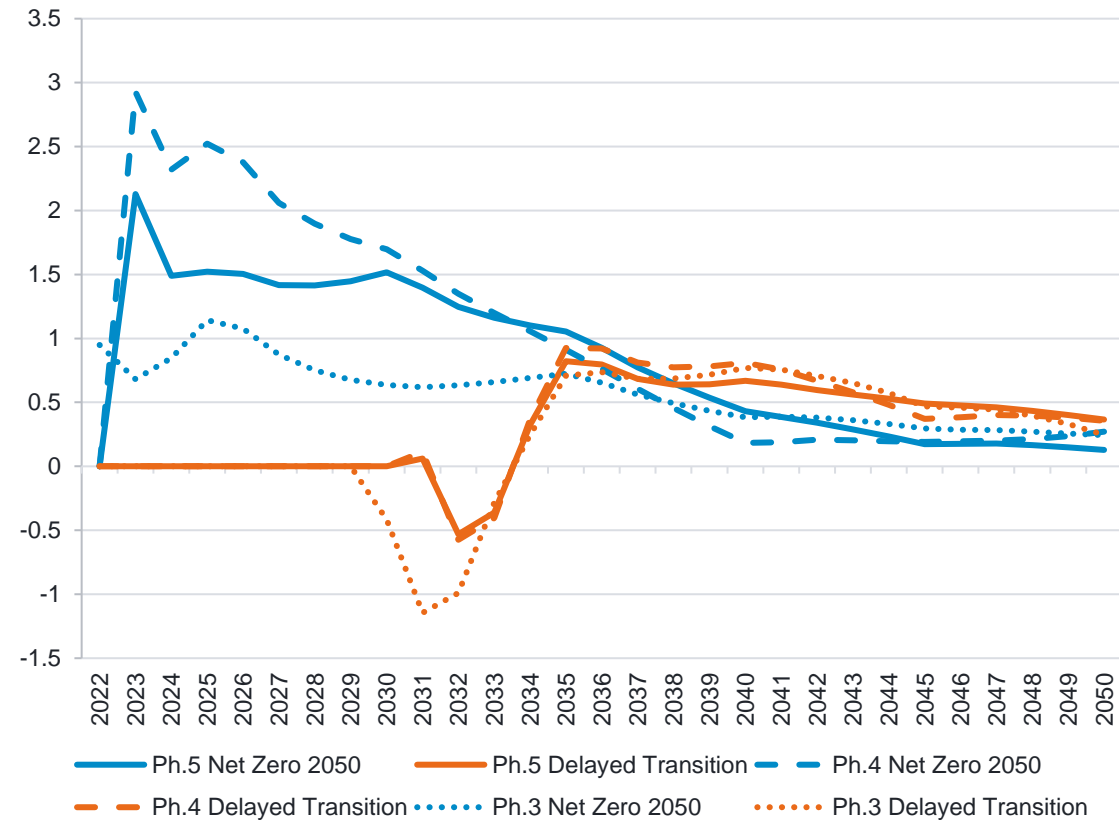
Source: NGFS, Fidelity International, 2025. For illustrative purposes only.

Macroeconomic impact of climate change

Inflation, United States (deviation from baseline)



Policy Rate, United States



Source: NGFS, Fidelity International, 2025. For illustrative purposes only.

Impact of climate change on the economy and asset returns



In all scenarios, there is a negative effect on **GDP growth**. Impact is higher in the long-term if no action is taken.

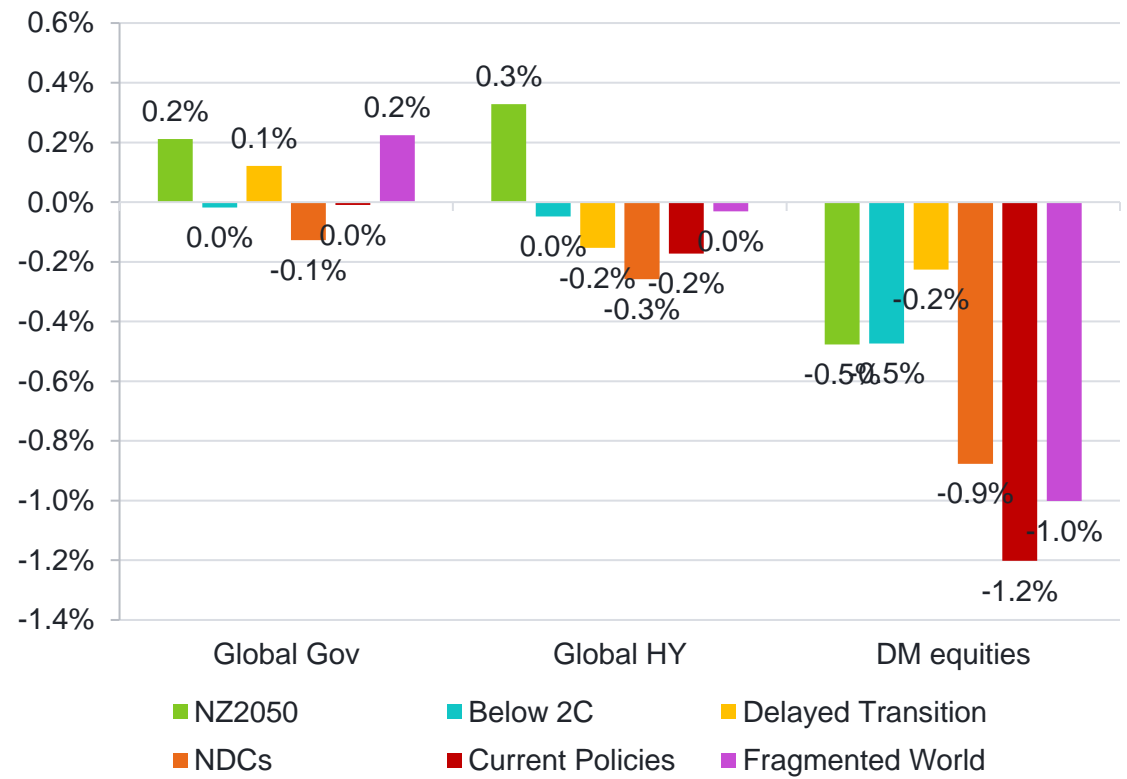


Inflation rate will likely rise globally primarily due to introduction/increase of carbon pricing initiatives.



Policy rates will also likely be affected in the short/medium term as a response to GDP and inflation shocks.

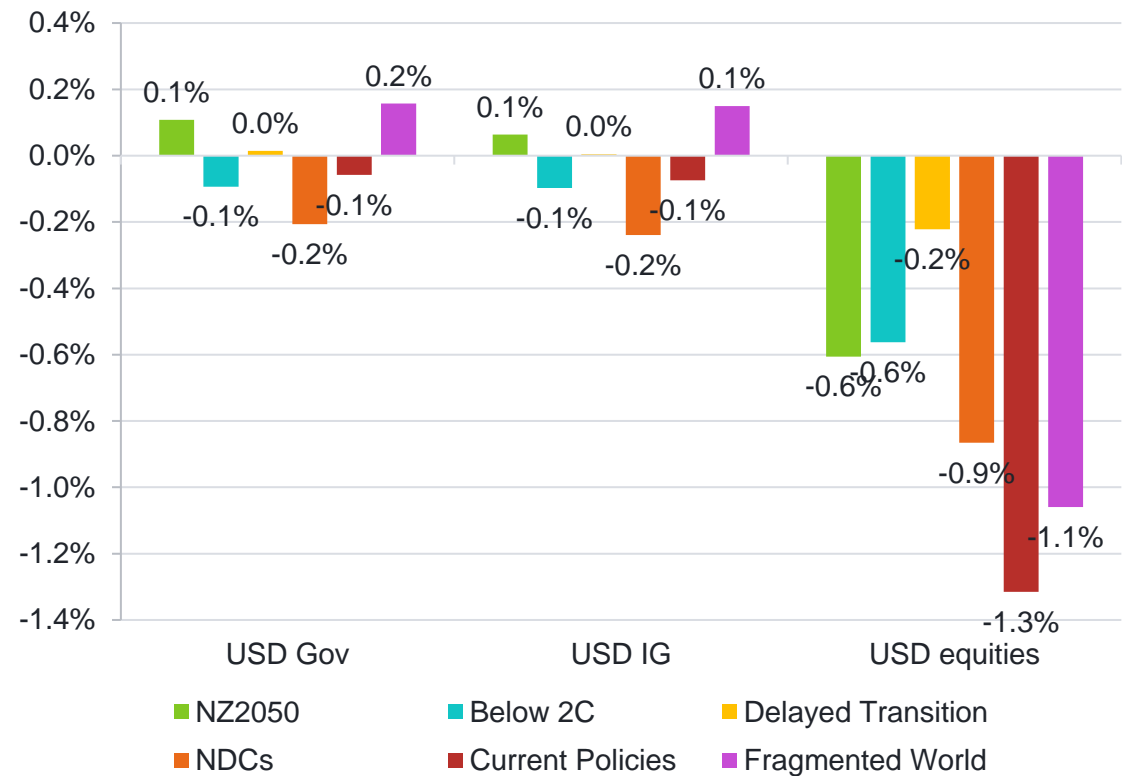
USD 10-year annualised real return **deltas** compared to baseline



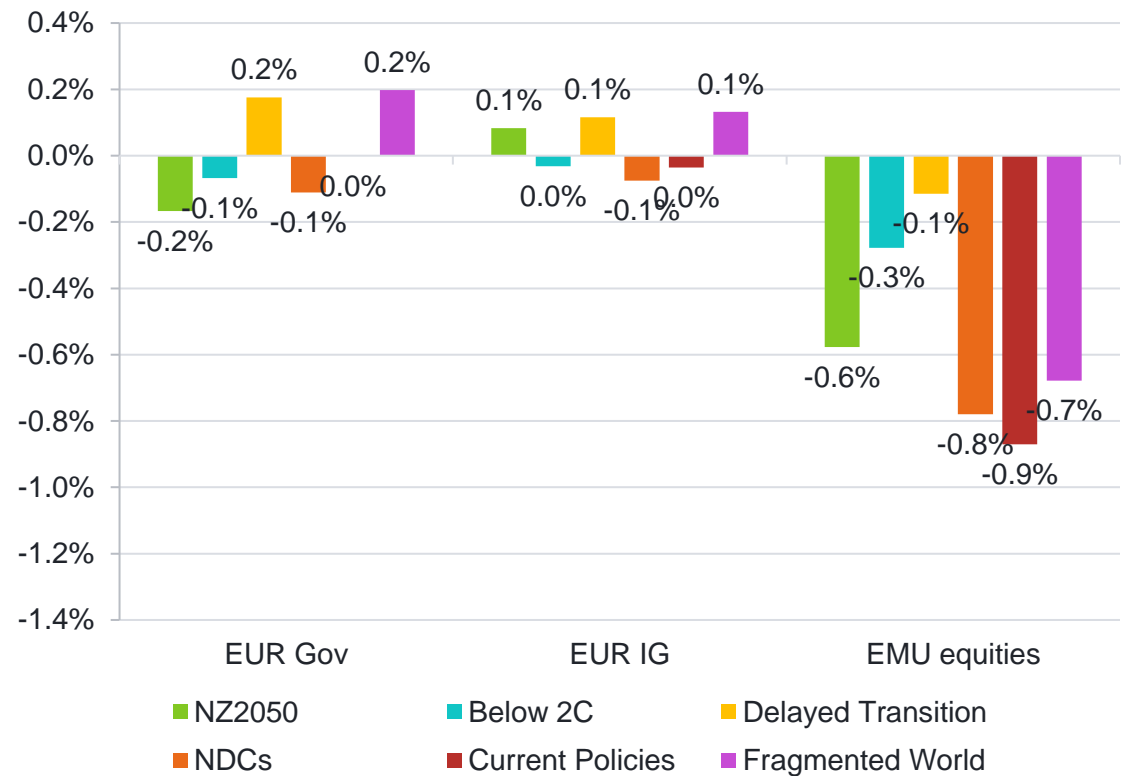
Source: Fidelity International, 2025. Assumptions are US-dollar denominated, based on proprietary CMA modelling. Baseline refers to Fidelity's climate-agnostic baseline. For illustrative purposes only.

Impact of climate change on the economy and asset returns

USD 10-year ann. real return **deltas** compared to baseline



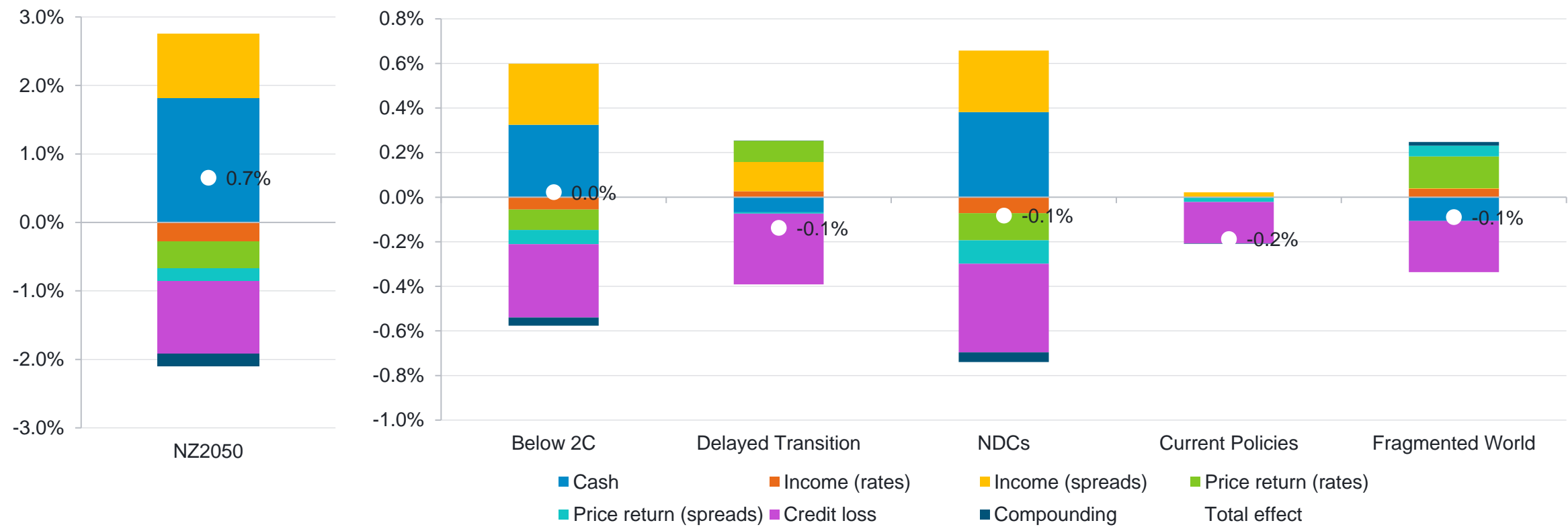
EUR 10-year ann. real return **deltas** compared to baseline



Source: Fidelity International, 2025. Assumptions are USD and EUR denominated, based on proprietary CMA modelling. Baseline refers to Fidelity's climate-agnostic baseline. For illustrative purposes only.

Price and income returns tend to offset each other in most scenarios

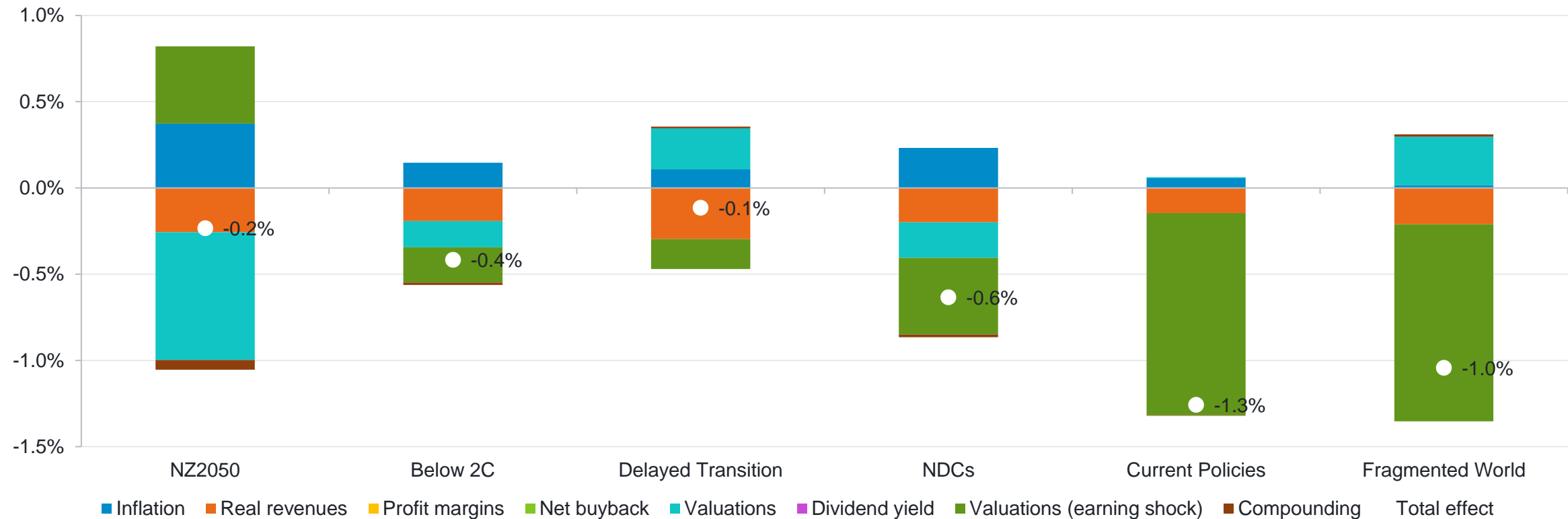
US HY 10Y ann. expected returns deviations from baseline



Source: Fidelity International, 2025. Assumptions are US-dollar denominated, based on proprietary CMA modelling. Baseline refers to Fidelity's climate-agnostic baseline. For illustrative purposes only.

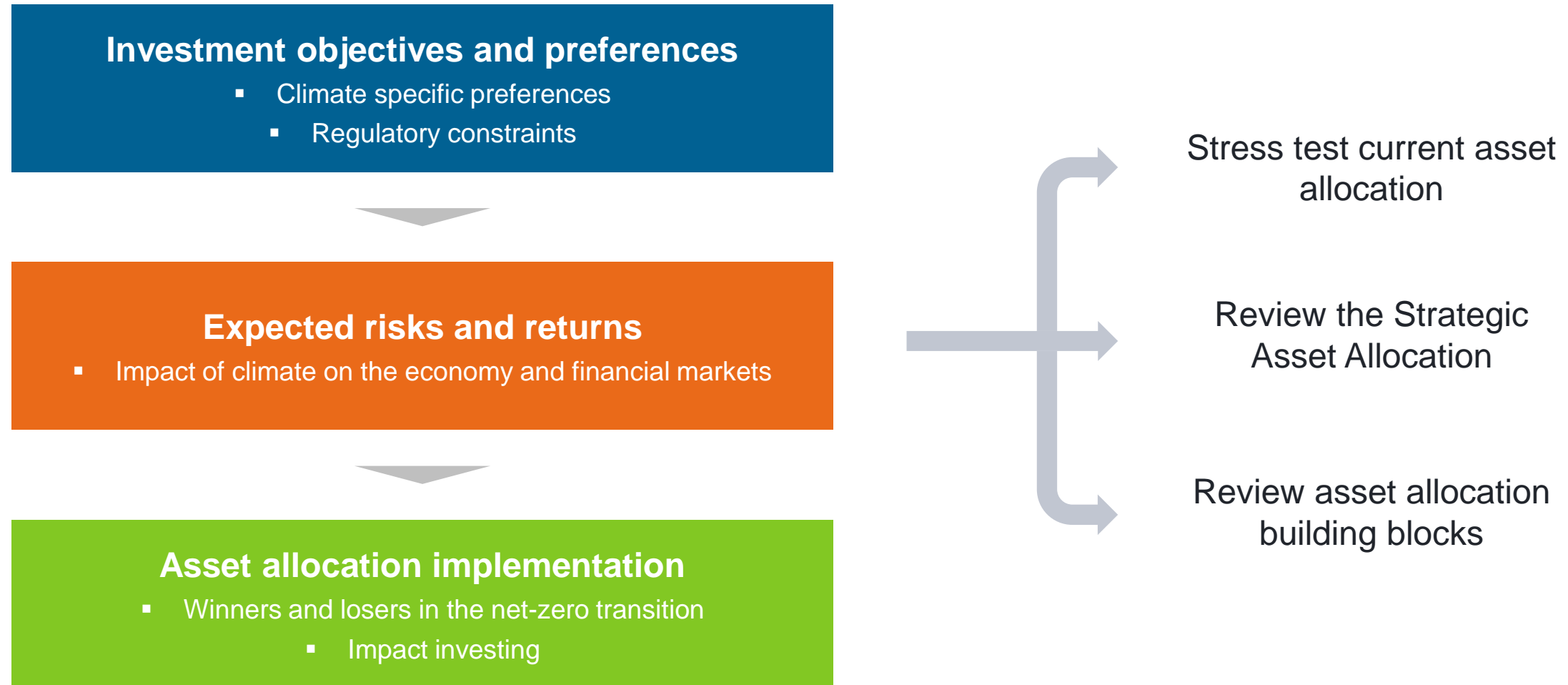
Valuations and real cash flows drive equity returns down

US equities 10Y annualised expected returns deviation from baseline



Source: Fidelity International, 2025. Assumptions are US-dollar denominated, based on proprietary CMA modelling. Baseline refers to Fidelity's climate-agnostic baseline. For illustrative purposes only.

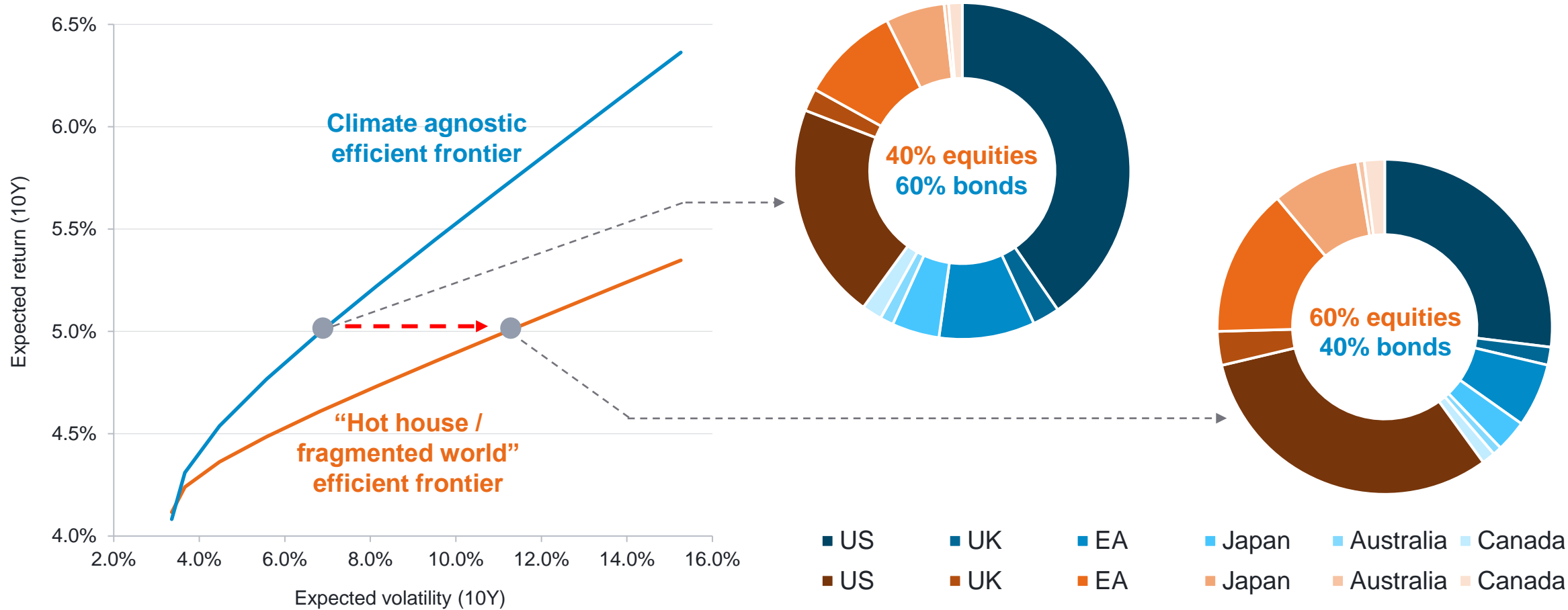
The impact of climate change on the portfolio construction process



Source: Fidelity International. For illustrative purposes only.

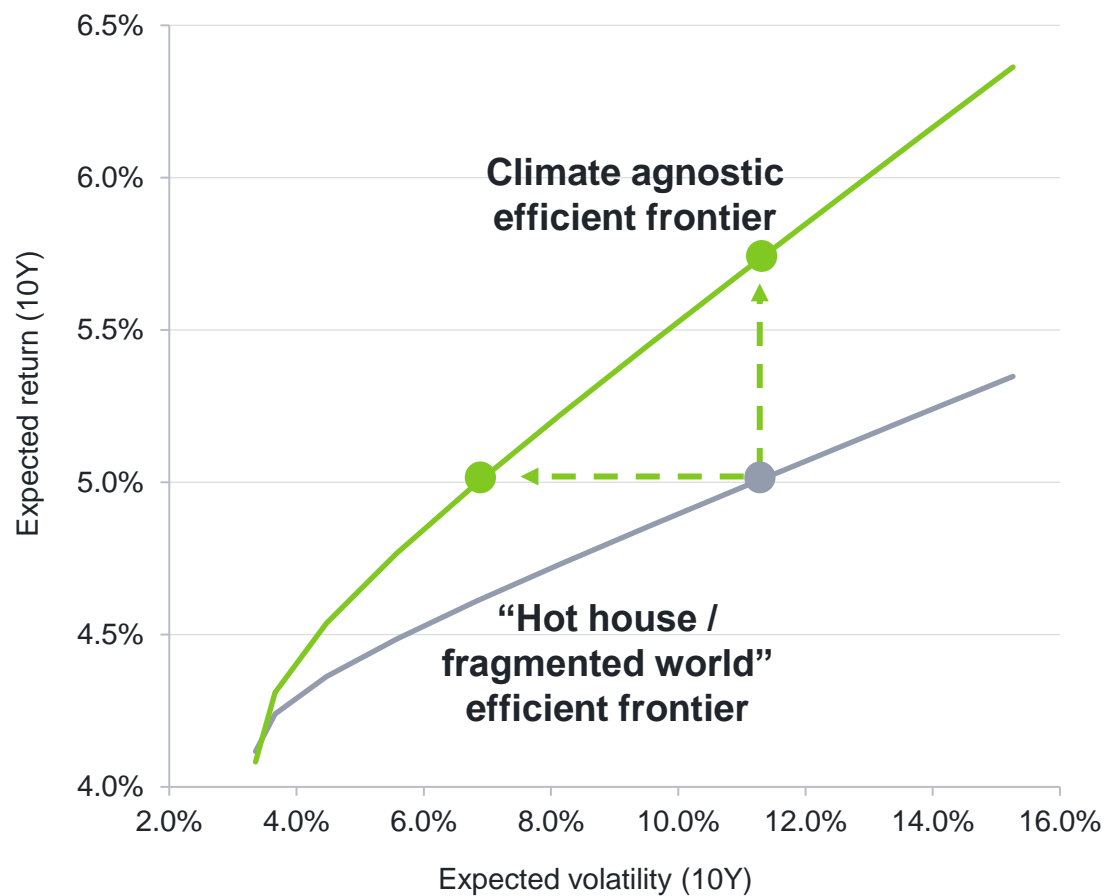
Climate risks will likely flatten the risk/return efficient frontier

Scenario analysis: agnostic vs climate-aware efficient frontier for a 5% return asset allocation



Source: Fidelity International, 2025. Efficient frontier built using 10-year expected risk and return of global equities and global aggregate bonds. For illustrative purposes only.

Multi asset investing in a world with climate risks



1

Stress test asset and liabilities

2

Active strategies to exploit opportunities

3

Active strategies to manage evolving risks

4

Private assets

Source: Fidelity International, 2025. Efficient frontier built using 10-year expected risk and return of global equities and global aggregate bonds. For illustrative purposes only.

Conclusions

- Climate risks are likely to be underestimated by investors today.
- Given current information, a delayed/disorderly transition is the most likely scenario.
- Transition and physical risks will continue to affect our economies, in particular inflation, GDP growth and policy rate as a result.
- Fixed income markets are likely to be less affected by climate change as price impact is balanced by higher income. In the Delayed Transition and Fragmented World scenarios the timing of policy action is crucial.
- Equities exhibit a greater sensitivity to climate change given their perpetual cash flow nature. This will be the result of physical risk which will likely be priced in by markets over the medium term.
- Climate change risks will likely contribute to keep the risk/return efficient frontier flatter than before.
- Diversification across and within assets plus an active portfolio management approach are crucial.

Appendix

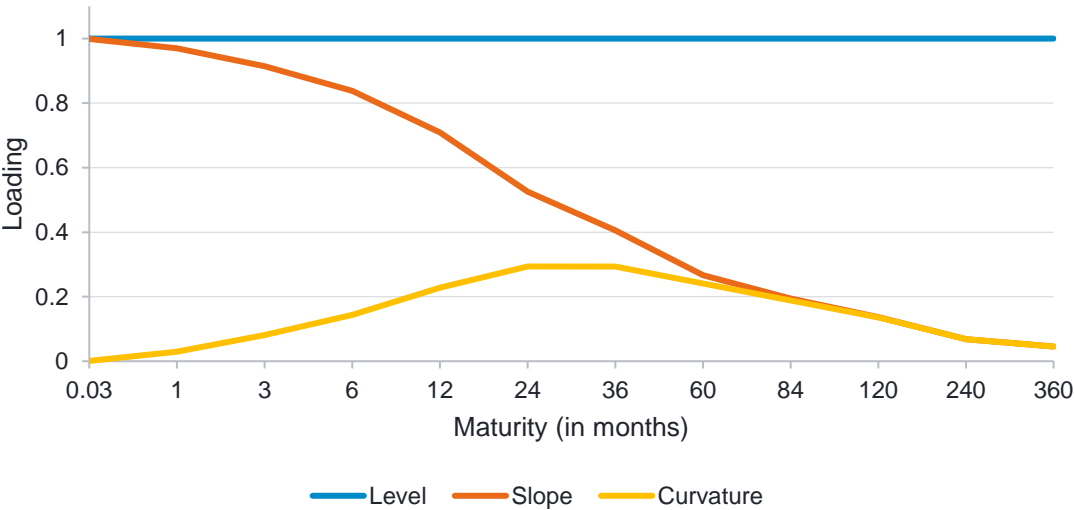
Methodology overview – fixed income

Forward-looking macroeconomic views combined with econometric modelling

Macroeconomic projections



Yield curve factors



Total return

Total return	Price return	Government rates
		Credit spread
	Income return	Government rates
		Credit spread
	Credit loss	Probability of default
		Recovery rate

Source: Fidelity International, 2024. For illustrative purposes only.

Methodology overview – equity

Forward-looking macroeconomic views combined with econometric modelling

Macroeconomic projections

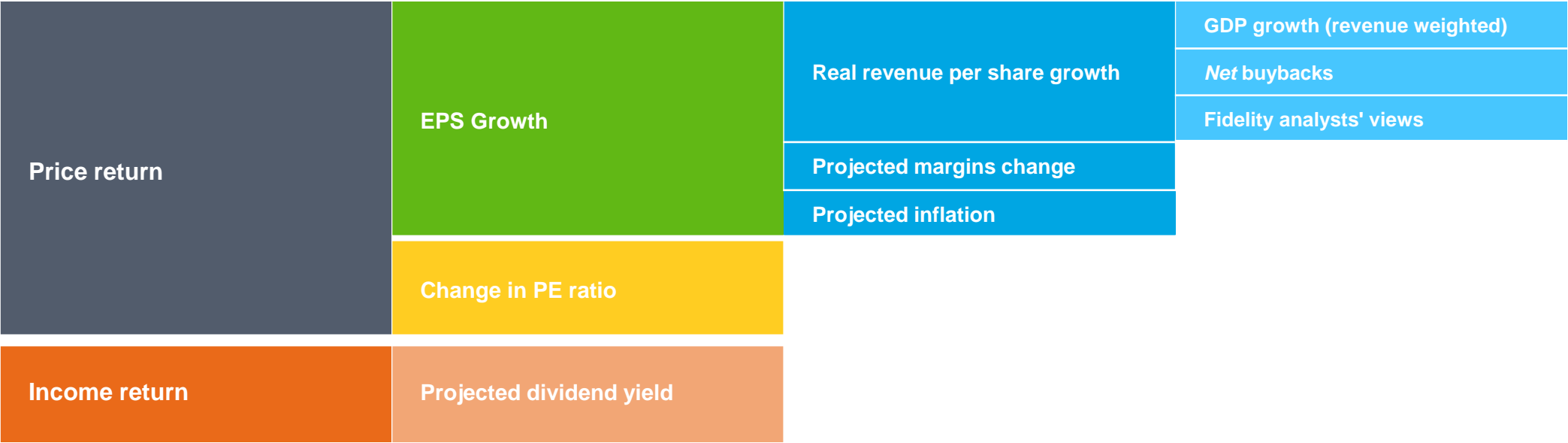
Real GDP

Inflation

Policy rate

Macroeconomic risk

Total
Return



Source: Fidelity International, 2025. For illustrative purposes only.

Methodology overview – private assets

Forward-looking macroeconomic views combined with econometric modelling

Macroeconomic projections

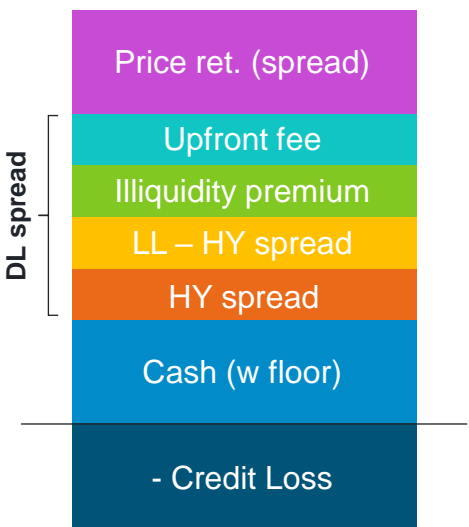
Real GDP

Inflation

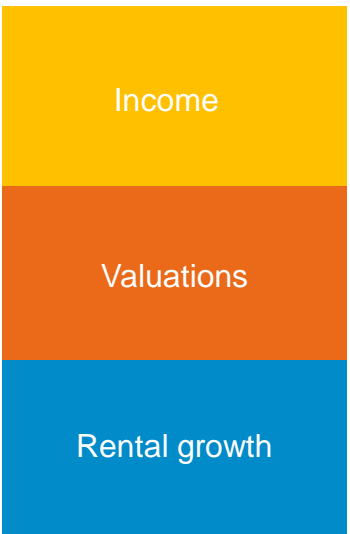
Policy rate

Macroeconomic risk

Direct Lending



Real Estate



Private equity



Alpha

Beta

- Fees

Source: Fidelity International, 2025. For illustrative purposes only.

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