

Exploring climate change risk

Climate change risk

Exploring the impact of climate change risk

Climate change is too uncertain to “build in” to our model directly like we do with e.g. inflation risk.

Instead we see how the results change if we stress the model in three different scenarios.

Given it is a stress test, all three scenarios are “bad”. Therefore need to consider all three scenarios to understand the strategy’s resilience

Purpose is to test resilience, not re-run all the previous analysis.

Climate scenarios give us extra information to help make our decision, they don’t replace existing modelling results

Testing “resilience” (TCFD requirement)

What could this mean?

- Does the chosen strategy still meet the chosen targets under all scenarios?
- Does it miss them by an acceptable margin (they are stress tests after all)?
- Does it satisfy other risk measures (e.g. short term downside risk)?
- Is it still the ‘best’ option even when compared against other options under the climate scenarios?

Use your judgement when deciding how to test resilience

Our scenarios are based on the speed and strength of the response to climate change

Green revolution	Delayed transition	Head in the sand
Concerted policy action starting now e.g. carbon pricing, green subsidies	No significant action in the short-term, meaning response must be stronger when it does happen	No or little policy action for many years
Public and private spending on “green solutions”	Shorter and sharper period of transition	Growing fears over ultimate consequences leads to market uncertainty and price adjustments
Improved disclosures encourage market prices to shift quickly	Greater (but delayed) transition risks but similar physical risks in the long term	Ineffective and piecemeal action increases uncertainty
Transition risks in the short term, but less physical risk in the long term	High expectation of achieving <2°C	Transition risks exceeded by physical risks
High expectation of achieving <2°C		Low/no expectation of achieving <2°C
Immediate	Timing of disruption	→ 10+ years
High	Intensity of disruption	→ Very high

All three scenarios are difficult so we are stress testing the base

In each scenario we assume a disruptive period of high volatility

Our scenarios assume that

- There will be a period of disruption linked either to the response to climate risk (transition risks) or the effects of it (physical risks)
- This disruption will lead to high volatility in financial markets
- The later the period of disruption, the more pronounced it will be

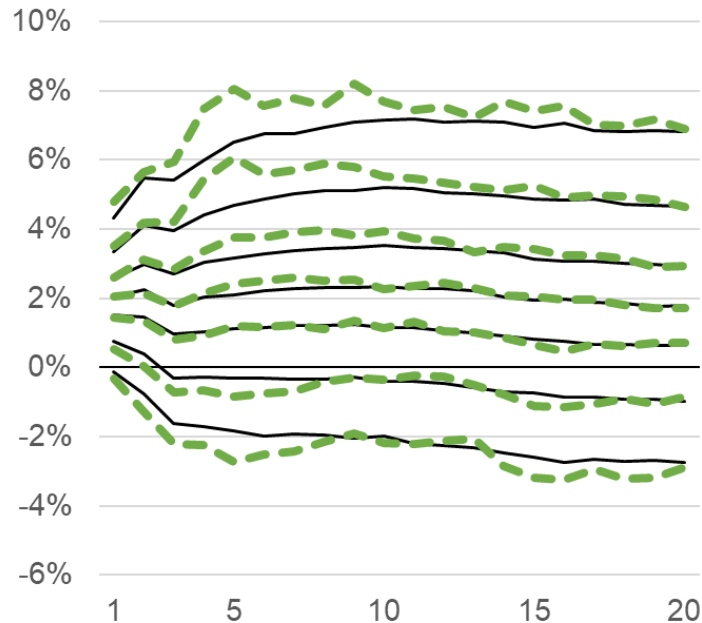
Scenario	Volatility criteria*			
	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Green revolution	Very high	Moderate	Moderate	
Delayed transition		Very high	High	
Head in the sand			High	Very high

*Volatility criteria: Moderate = 60th percentile, High = 75th percentile, Very high = 85th percentile

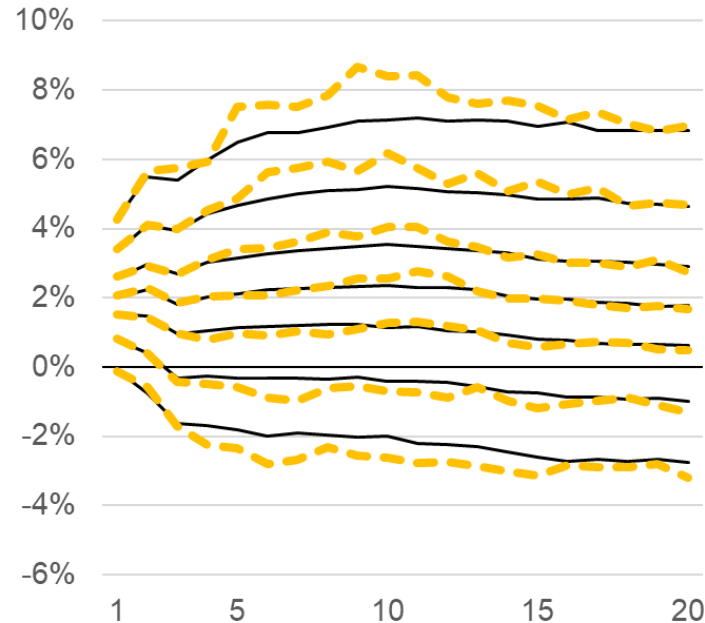
We use volatility criteria to “tilt” the modelling results towards simulations with higher volatility in the periods in question

Example of scenario impact: CPI inflation

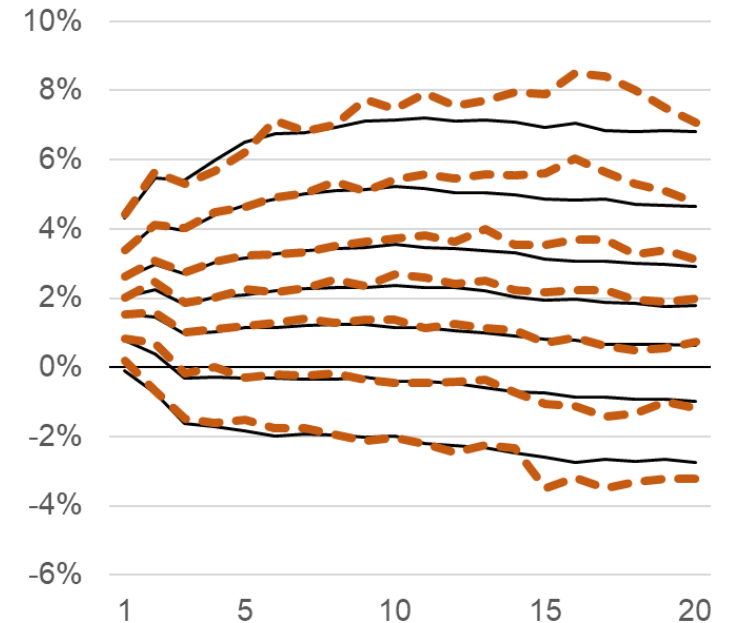
Green revolution



Delayed transition



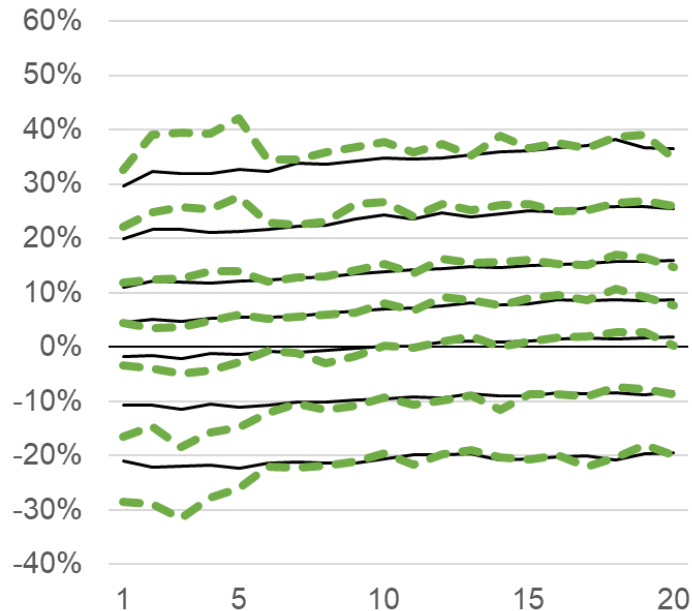
Head in the sand



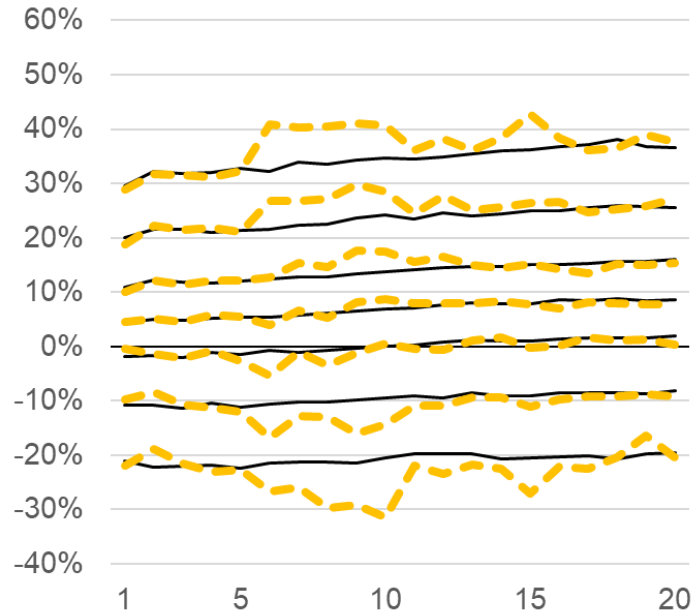
Scenario views widen the distribution of key variables in different time periods

Example of scenario impact: Global equity returns

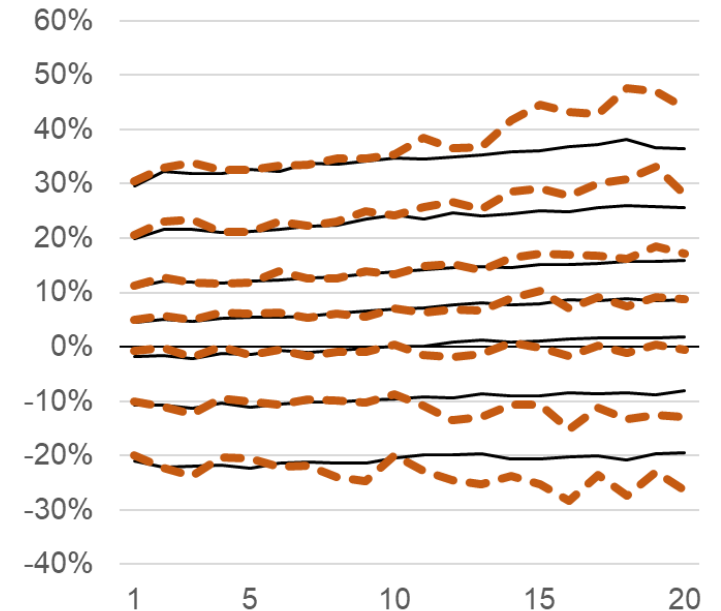
Green revolution



Delayed transition

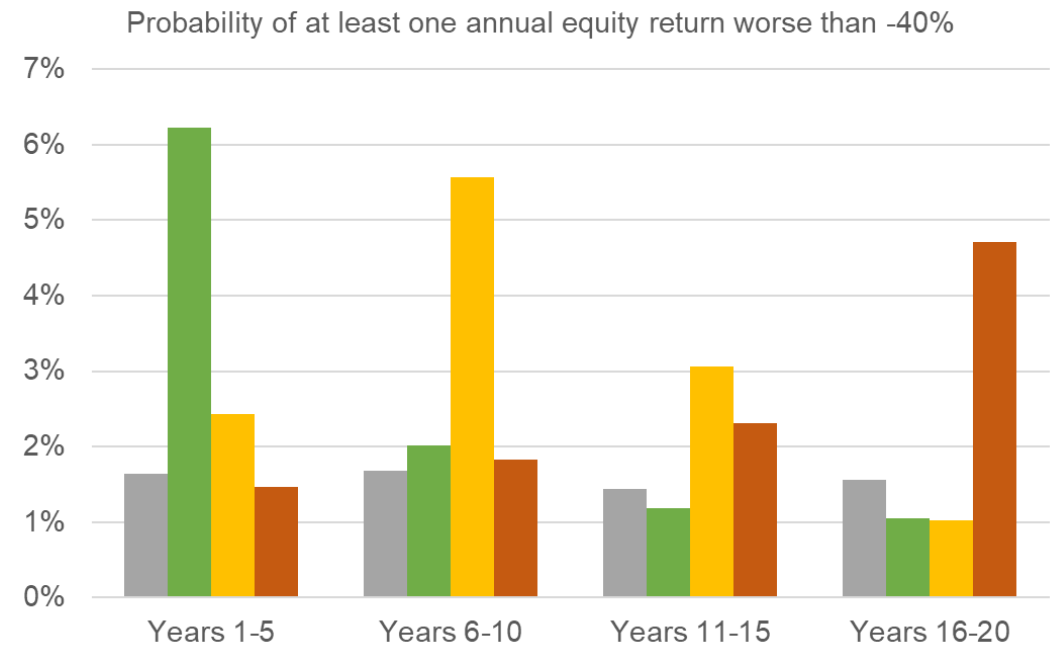
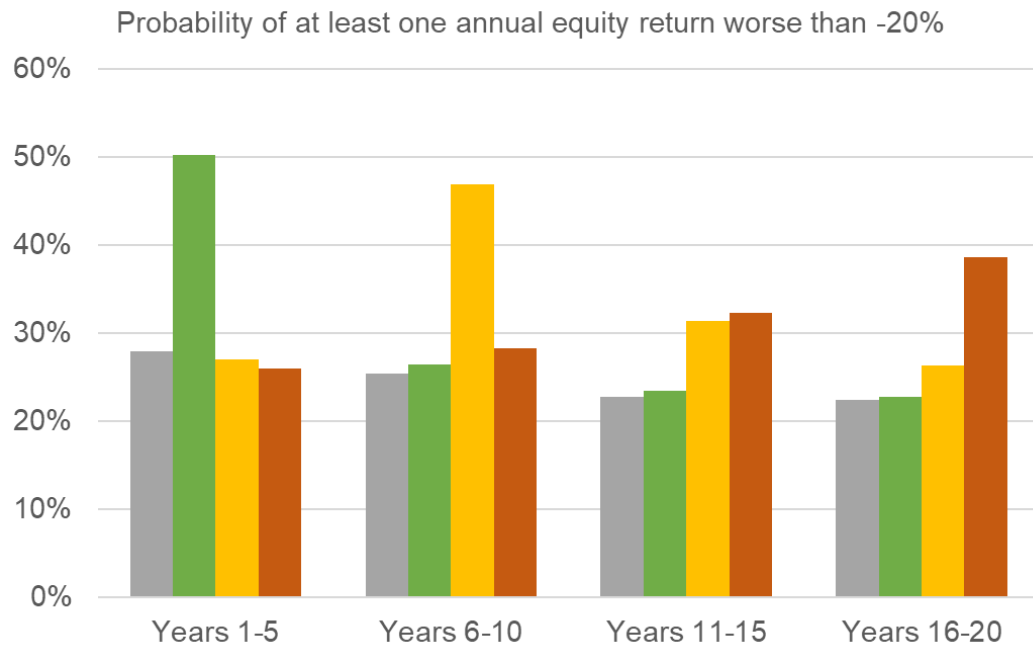


Head in the sand



Scenario views widen the distribution of key variables in different time periods

Example of scenario impact: equity shock



Bars from left to right: Unweighted base case (grey), Green revolution, Delayed transition, Head in the sand

Increased volatility gives a much higher chance of significant equity shocks

Results: impact on future funding outcomes

No significant alteration to the funnel of future funding outcomes under climate change scenarios

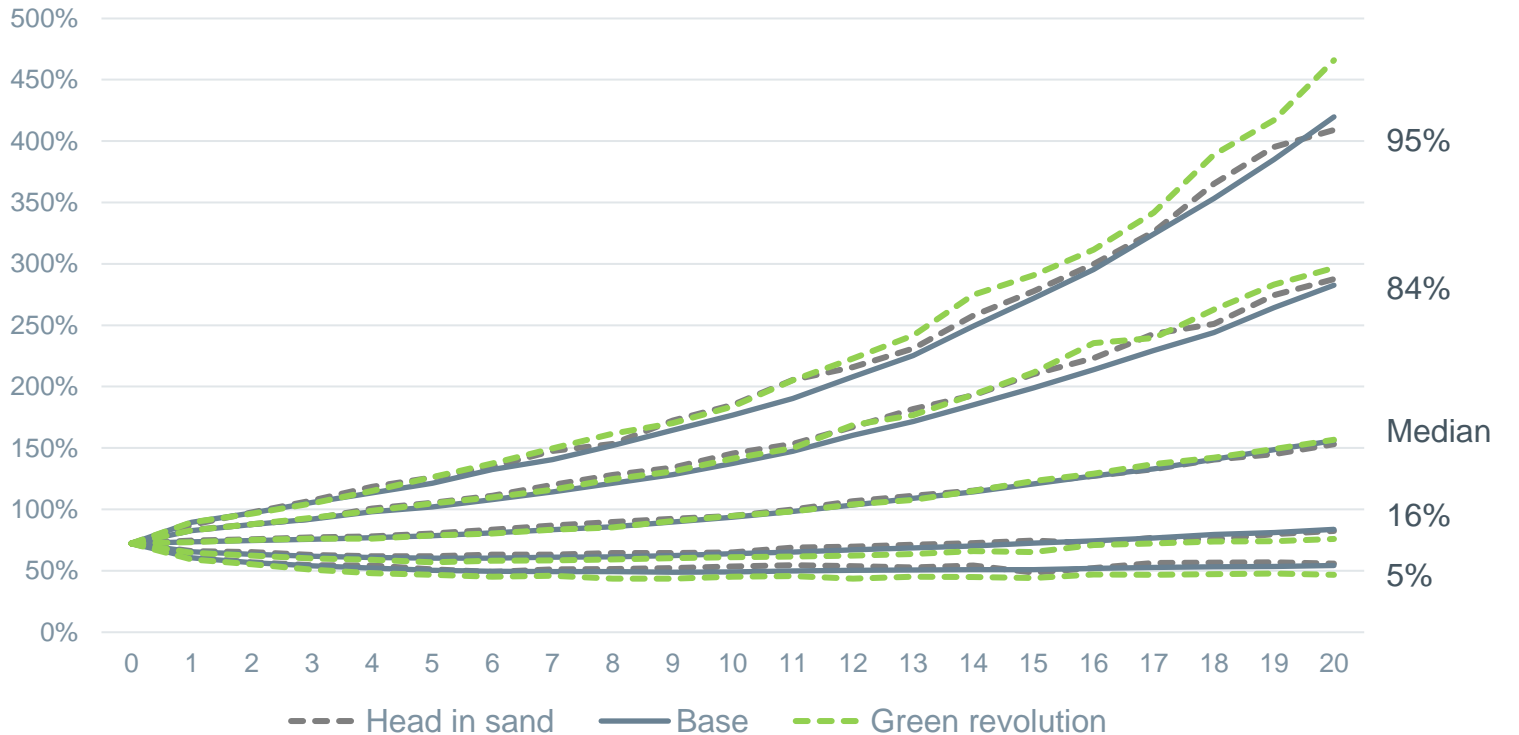
Funnel is slightly wider under climate change scenarios due to increased (upside and downside) volatility

Downside risk under Green Revolution slightly higher (due to timing of impact), but not a significant difference

Results for Wiltshire Council pool, based on "Current" investment strategy and "Fixed (current)" contribution strategy.

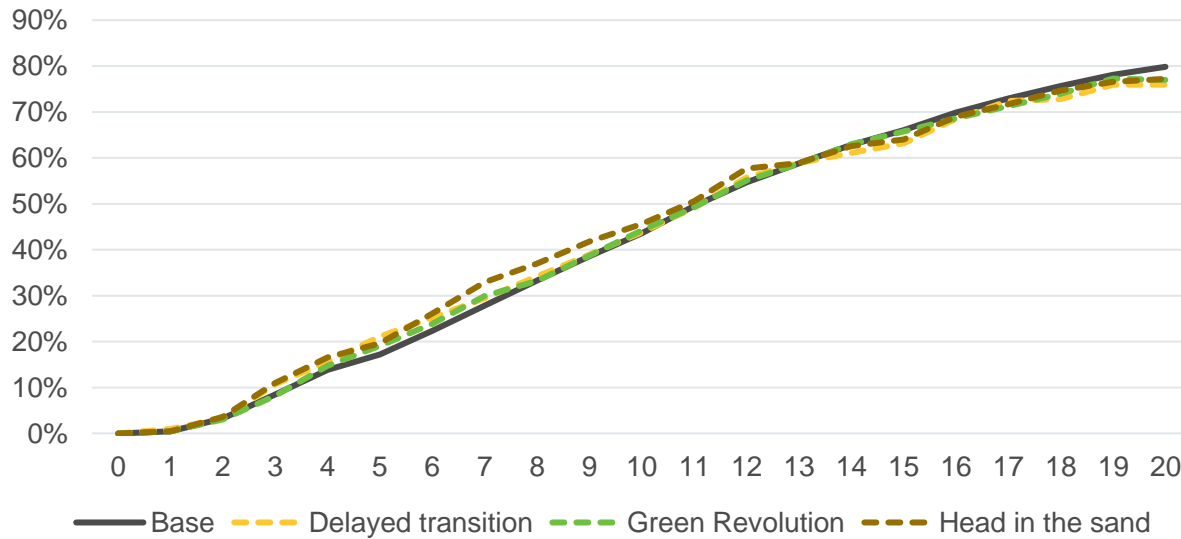
Absolute starting point of funding level should be ignored, focus of this analysis is on relative differences

Funding level - progression over time

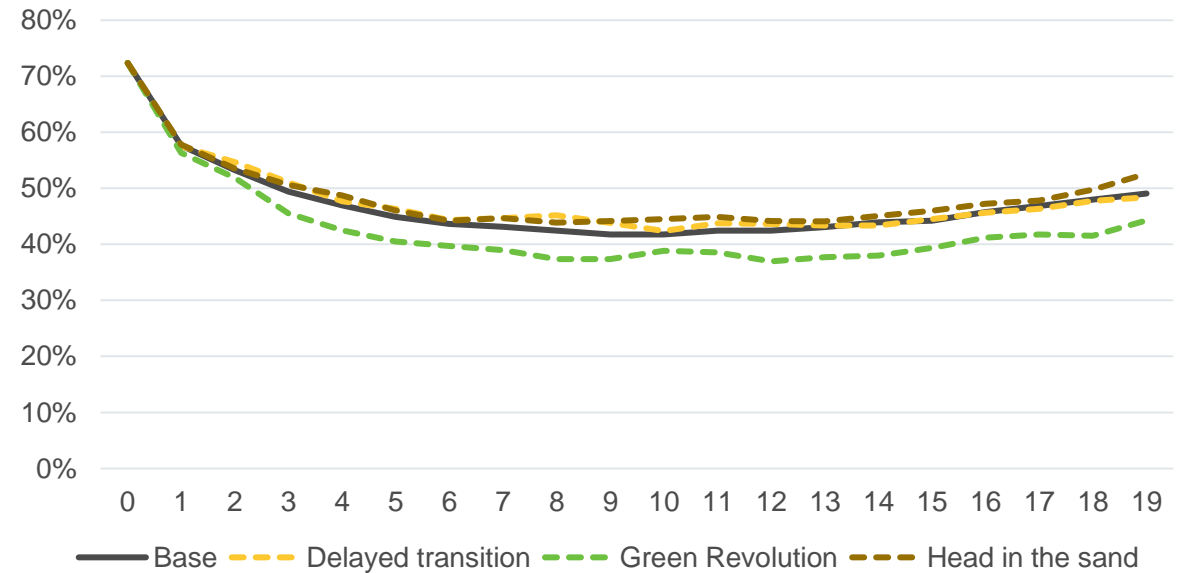


Results: impact on risk metrics

Likelihood of success - progression over time



Downside risk - progression over time



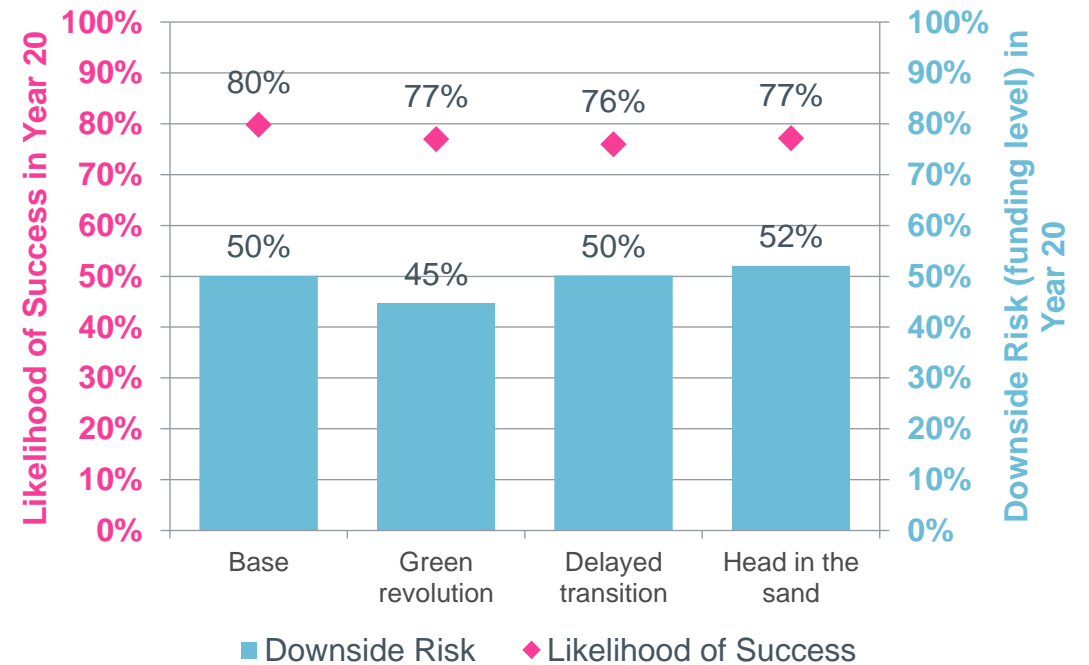
Results for Wiltshire Council pool, based on “Current” investment strategy and “Current rate – 1% until 2026” contribution strategy.

Results – summary risk metrics

Downside risk is increased under ‘Green revolution’ scenario. This will be due to compounding effect on the early period of volatility in the scenario.

No material difference in results (bearing in mind nature of stress testing) to suggest “Current rate – 1% until 2026” strategy is currently not appropriate.

However, Fund should be aware of the sensitivity of its strategy to potential climate change risk and monitor as part of its risk management framework.



Results for Group 1 Councils, based on “Current” investment strategy and “Current rate – 1% until 2026” contribution strategy.

The approach used to model the different contribution rate strategies ensures that the strategy is robust when considered alongside climate change risk