

A decorative graphic on the left side of the slide consisting of three overlapping circles in shades of blue, orange, and green.

10 years of Ortec Finance Scenarios: Past Breakthroughs, Future Directions

Patrick Tuijp | 4 June 2026

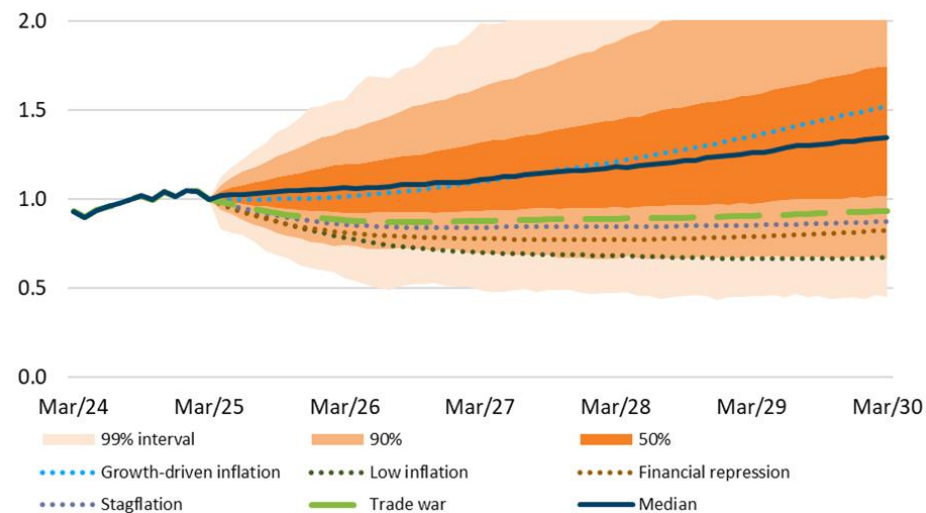
Past
-
How did our
scenarios evolve?



Why Ortec Finance Scenarios?

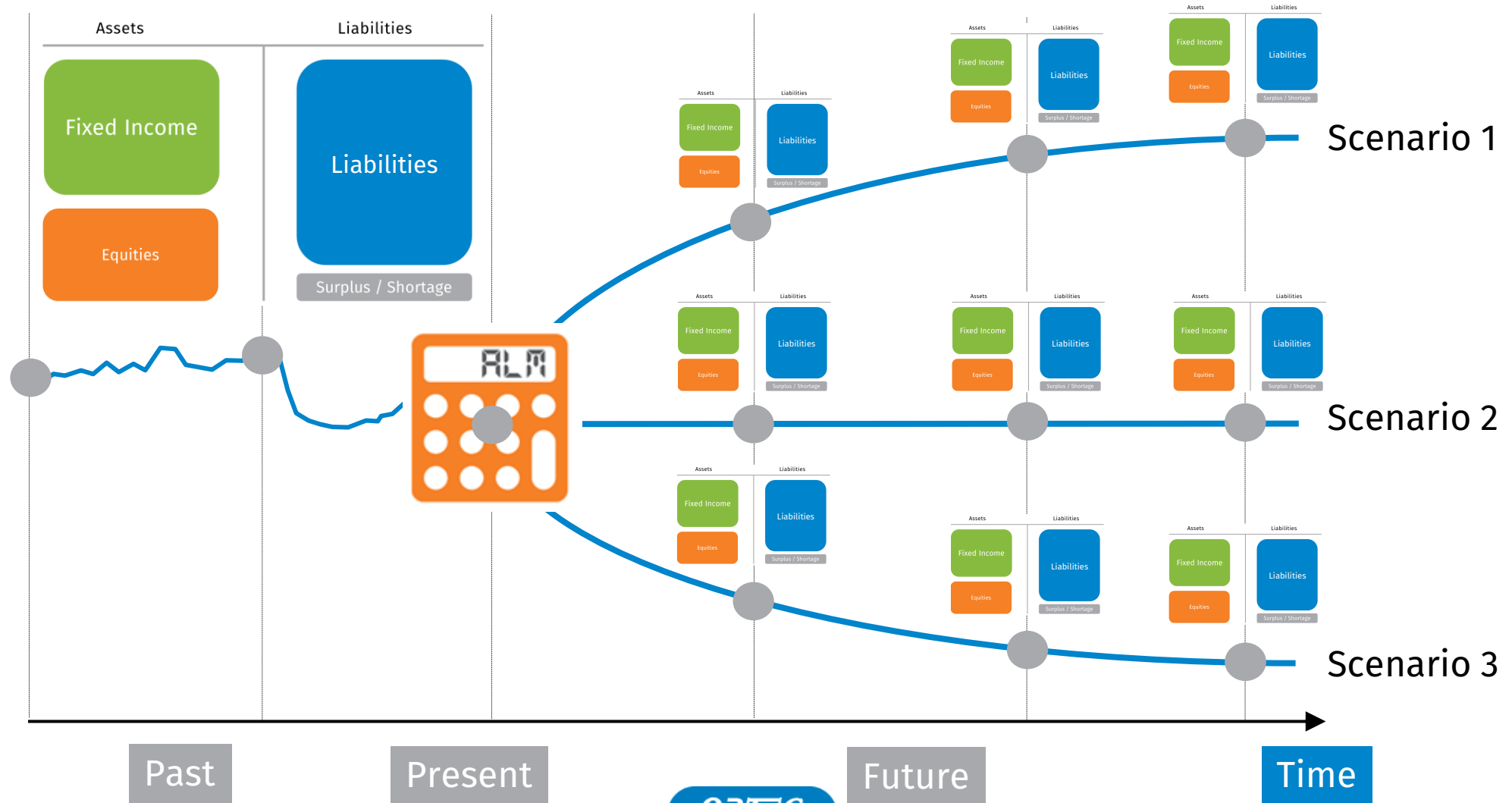
Key challenge

- Institutional investors must **make decisions** and **manage risk** under deep uncertainty across geographies, asset classes and time horizons.
- Challenging to predict what will happen, though can certainly describe as realistically as possible what might happen.
- Investors need **scenarios** describing what might happen to economies and financial markets.



Scenario analysis: strategy evaluation

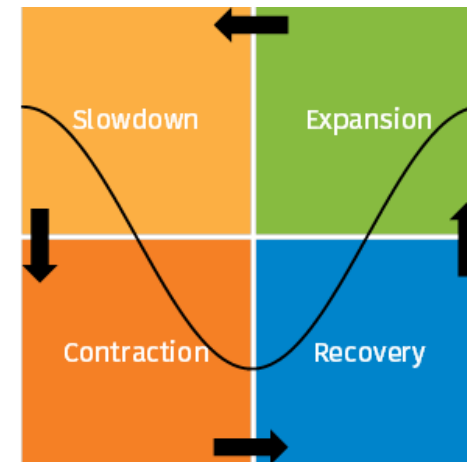
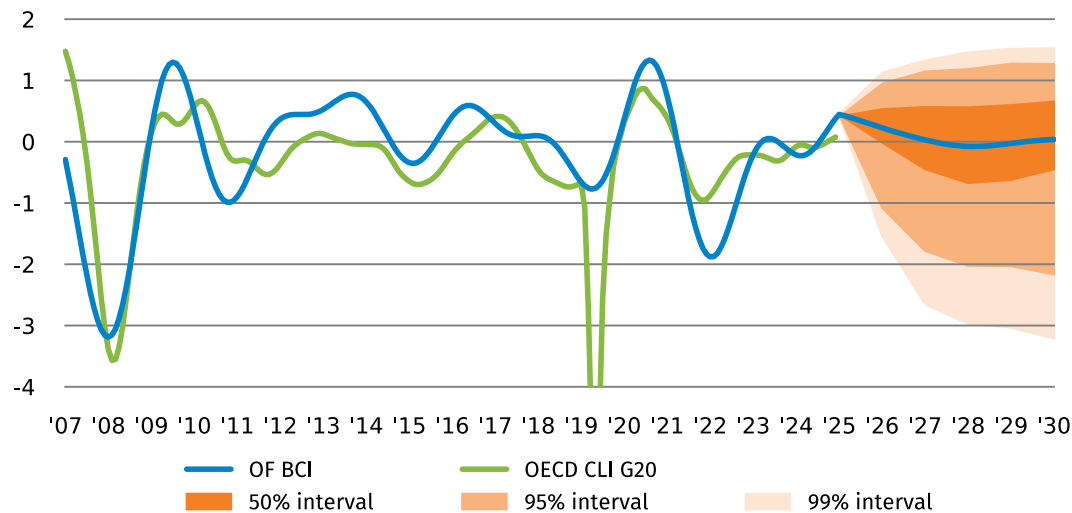
Simulating the balance sheet across different scenarios



How should the Ortec Finance Scenarios look?

Generating decision-relevant scenarios

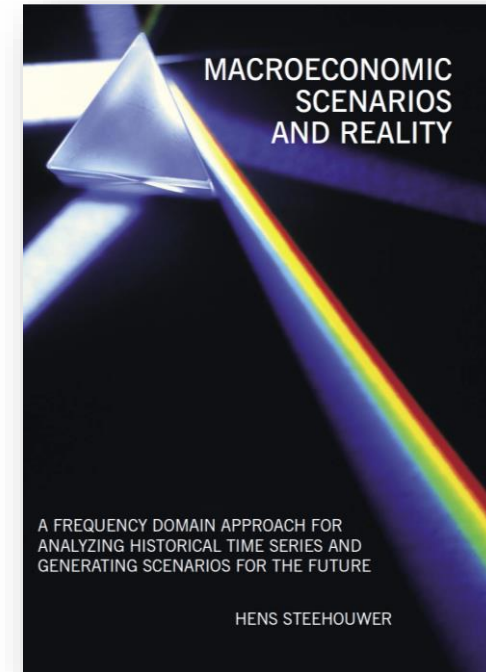
- We believe proper models, properly used, are the best tool to construct investment scenarios.
- Scenarios should consider all elements that **materially impact the consequences of investment decisions** as realistically as possible.
- Our model should therefore reflect robust empirical patterns, referred to as **stylized facts**.
 - Example: business cycles.



Bridging the gap between the short and long term

A tale of two models

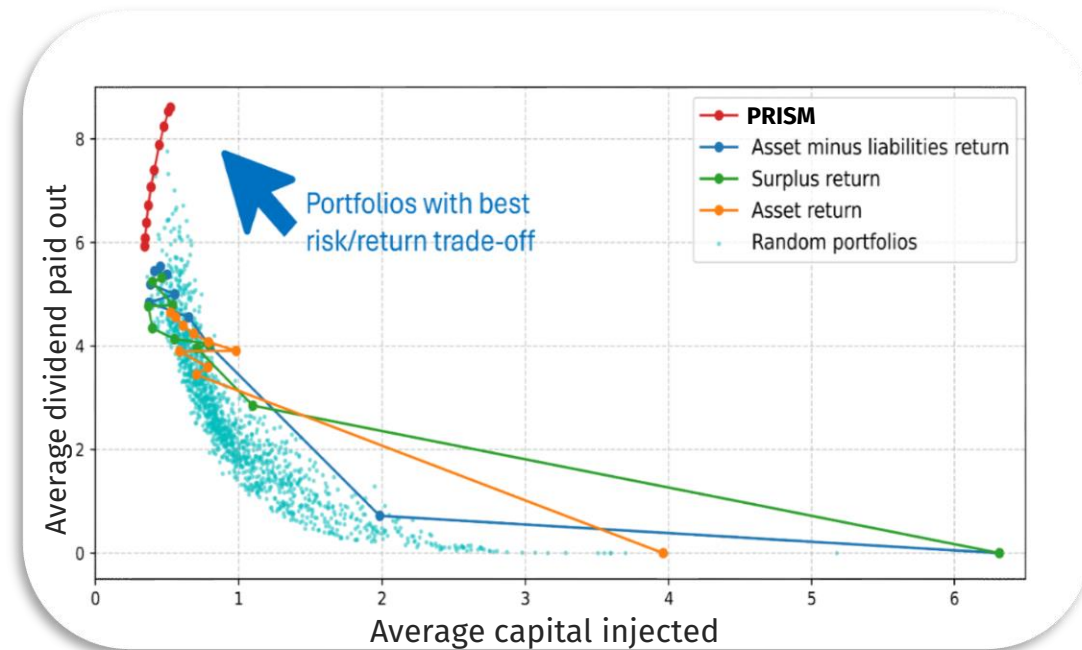
- Dual-model challenge, inconsistencies in decision making:
 - VAR for the long term (1985).
 - Historical simulation for the short term (2005).
- Academic research by Steehouwer (2005):
 - How well models replicate stylized facts.
 - Solution to inconsistency long- and short-term scenarios.
- **Dynamic Scenario Generator (DSG)**, launched in 2009:
 - Frequency-domain techniques capture economic cycles **across horizons**.
 - Dynamic Factor Models to **solve dimensionality issues**.



The OFS (2016)

What sets us apart

- The **Ortec Finance Scenario set (OFS)**, captures risk and return
 - of 700+ variables and asset classes across 23 regions
 - from monthly to multi-decade horizons
- Single coherent view of:
 - Funding, solvency, and risk metrics at **asset class** and **total-portfolio level**.
 - SAA, ALM, balance-sheet, and wealth **decisions**.
- House view calibration updated monthly.
- Result: **high-quality investment decisions** based on realistic projections.



Present - Innovations



The Economy Customization Layer (2020)

“It should take only three clicks”

What:

- Impose own Capital Market Assumptions.
- Easy (!) calibration across horizons.
- Direct graphical feedback, fast.

When:

- Development kick-off December 2019
- Client feedback on plans / GUI April 2020
- Roll-out to clients end of 2020!

The screenshot displays the 'Economy Customization Layer' interface. On the left, a navigation pane shows 'Risk and return assumptions' selected. The main area is titled 'Risk and return assumptions' and includes buttons for 'Select variables', 'Select maturities', and 'Select statistics'. Below these, a table shows the selected view (Target values) for various variables.

Variable name	Type	Maturity	Mean Year 5	Mean Year 10	Geomean Year 5	Geomean Year 10	Stdev Year 5	Stdev Year 10
Return or level variable (2 items)								
EQTR_US	Return or level variable				0.0550	0.0650		
EQTR_UK	Return or level variable				0.0500	0.0600		
Term structure (2 items)								
GOV_NOM_ZERO_US	Term structure	0y3m	0.0350	0.0300			0.0200	
GOV_NOM_ZERO_US	Term structure	10y0m	0.0450	0.0400			0.0175	

At the bottom of the interface are buttons for 'Calculate underlying values', 'Calibrate', and 'Export to Excel'. On the right side, two charts are displayed: 'Underlying EQTR_US (in USD)' and 'Customized EQTR_US (in USD)'. Both charts show a time series from 03/2026 to 03/2066 with a central line and a shaded area representing uncertainty.



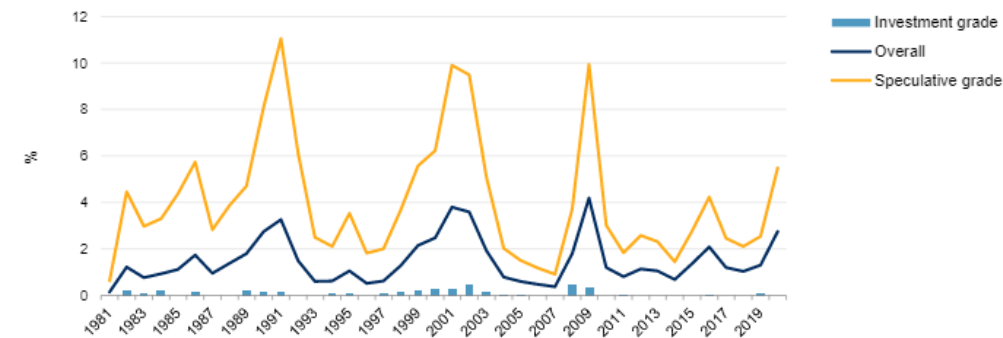
The Credit Rating Transition Module (2021)

Why did we build this?

- Rebalance-to-benchmark credit model: **periodic rebalancing** w.r.t. rating and maturity.
 - Suitable for fast calculations for investments tracking market benchmarks.
- Credit Rating Transition Module: **buy-and-hold/maintain** portfolios, change in rating over time.
 - Rating transition probabilities change with the market.



Global Default Rates: Investment Grade Versus Speculative Grade

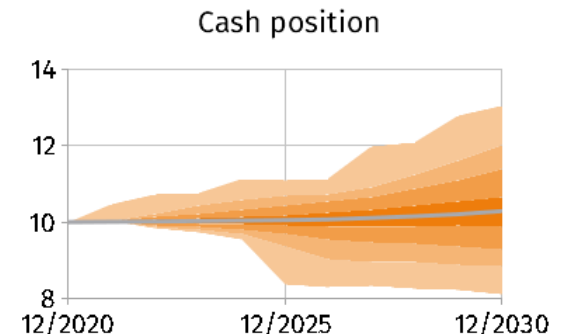
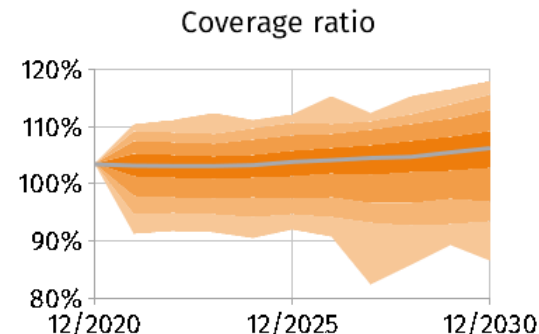
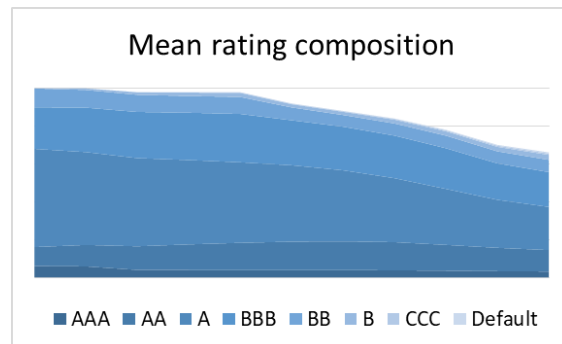
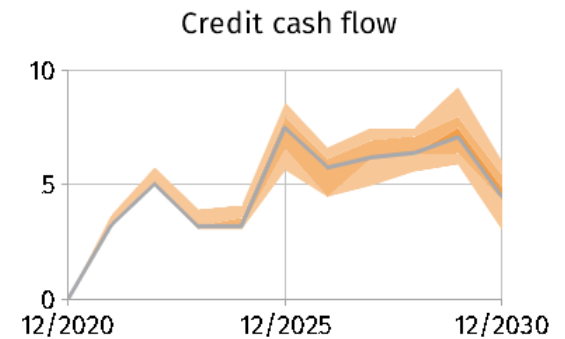
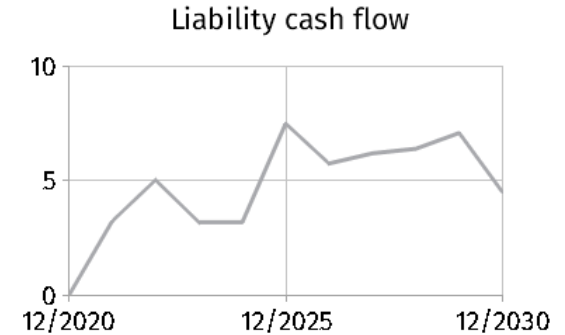


Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®.
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The Credit Rating Transition Module (2021)

What does it give you?

- Example balance sheet:
 - Fixed liability cash flow pattern.
 - Buy-and-hold credit portfolio (liability matching).
 - Cash position (liquidity management).
- Analyze:
 - Rating composition.
 - Solvency and coverage ratio measures.
 - Cash flow matching.



Deterministic scenario approach (2022)

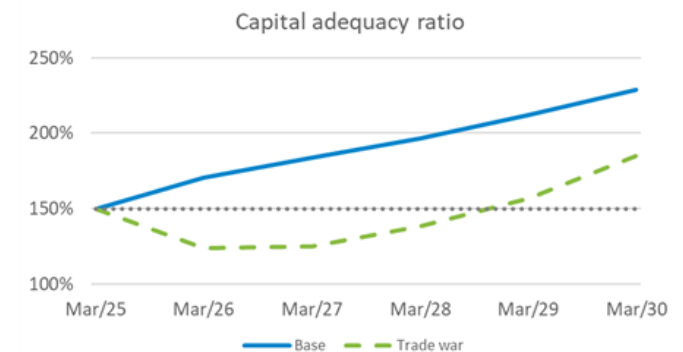
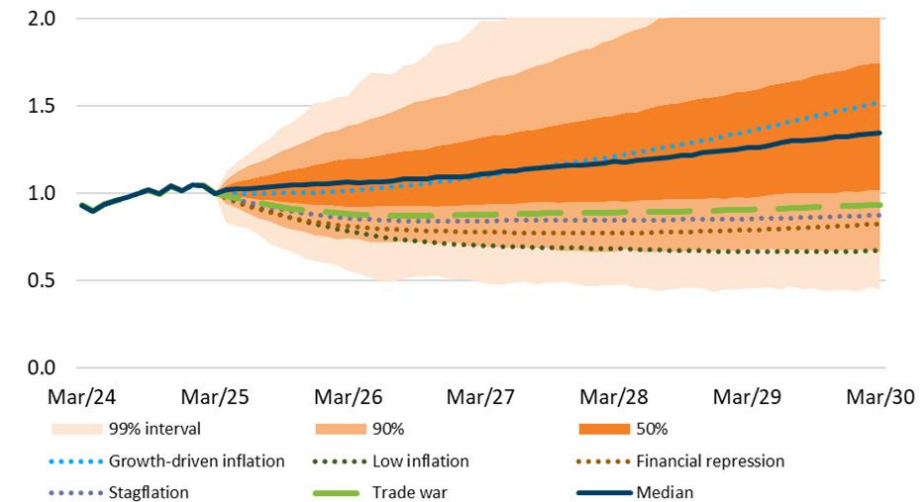
A great complement to stochastic scenarios

○ Stochastic scenarios reflect the **full range of uncertainties**, rather than only a few outcomes.

- Indicates which ranges are more likely than others.
- Can support making **risk-return tradeoffs**.

○ Why narrative-based deterministic scenarios?

- Creating **risk awareness**.
- Testing **robustness** of investment strategies.
- Identify risks overlooked by other methods.



Deterministic scenario approach (2022)

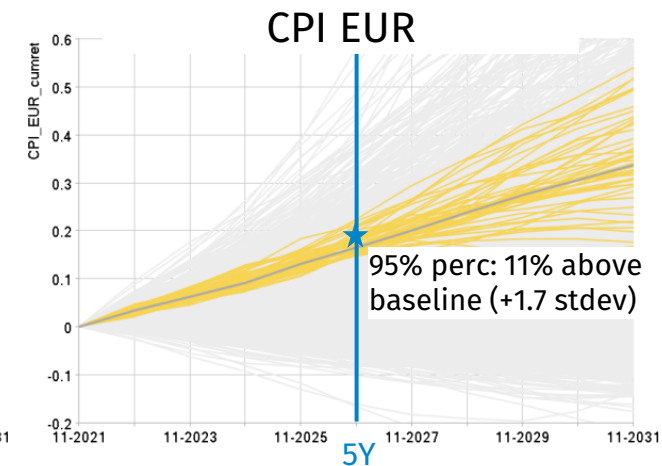
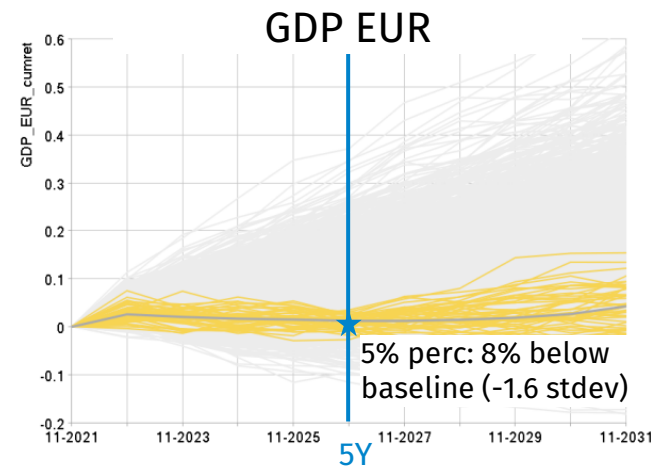
How did we do it?

- Challenges:

- Values for every asset class across full horizon?
- What co-movements to assume?
- How to construct efficiently and update to new market conditions?

- Our solution:

- Characterize narrative as a quantitative **filter** imposed on **stochastic scenarios**.
- Filtering retains **stylized facts**:
 - Relations, dynamics of risk and return reflected in stochastic scenarios.



Correlation views (2023)

The next step

- Frequently observed wish
 - Baseline as well as stress testing use case

○ What our methodology can do:

- Impose correlation views in a flexible and intuitive manner.
- Methodology also works for extreme adjustments.
- Consistent impact on tail correlations and term structure of correlations.

The screenshot displays the 'Economy Customization Layer' interface. On the left, a navigation pane shows the following structure:

- Economy customization layer
 - Settings
 - Risk and return assumptions
 - Initial term structure overrides
 - Correlation assumptions

The main content area is titled 'Correlation settings' and includes a note: 'Note that any risk and return assumptions may change the final correlation values, because risk and return assumptions are applied after applying the correlation assumptions.' Below this, the 'Horizon' is set to 10 year(s).

The 'Correlation matrix' section contains a 'Select variables' button and a 'Validate matrix' button. The 'Selected view' is set to 'Target values'. The matrix table is as follows:

Variable	EQTR_US	EQTR_UK	EQTR_EUR
EQTR_US	1.00		
EQTR_UK	0.50	1.00	
EQTR_EUR	0.30	0.40	1.00

At the bottom of the interface, there are three buttons: 'Calculate underlying values', 'Calibrate', and 'Export to Excel'.

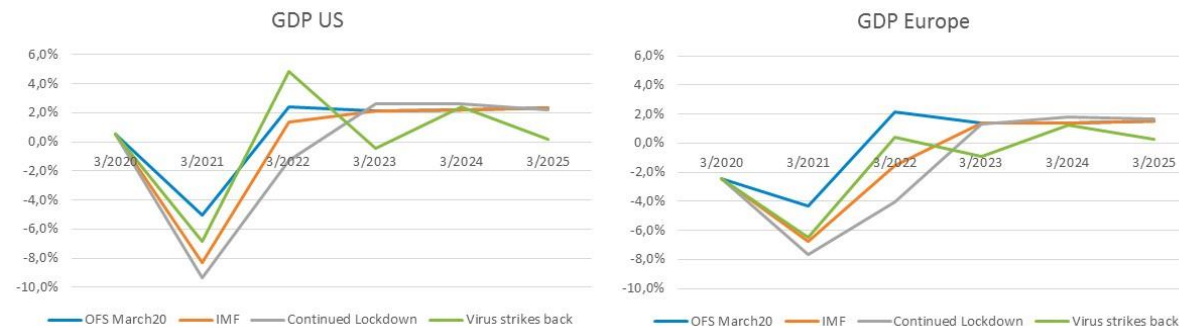
Present - Events



The Covid Shock (2020)

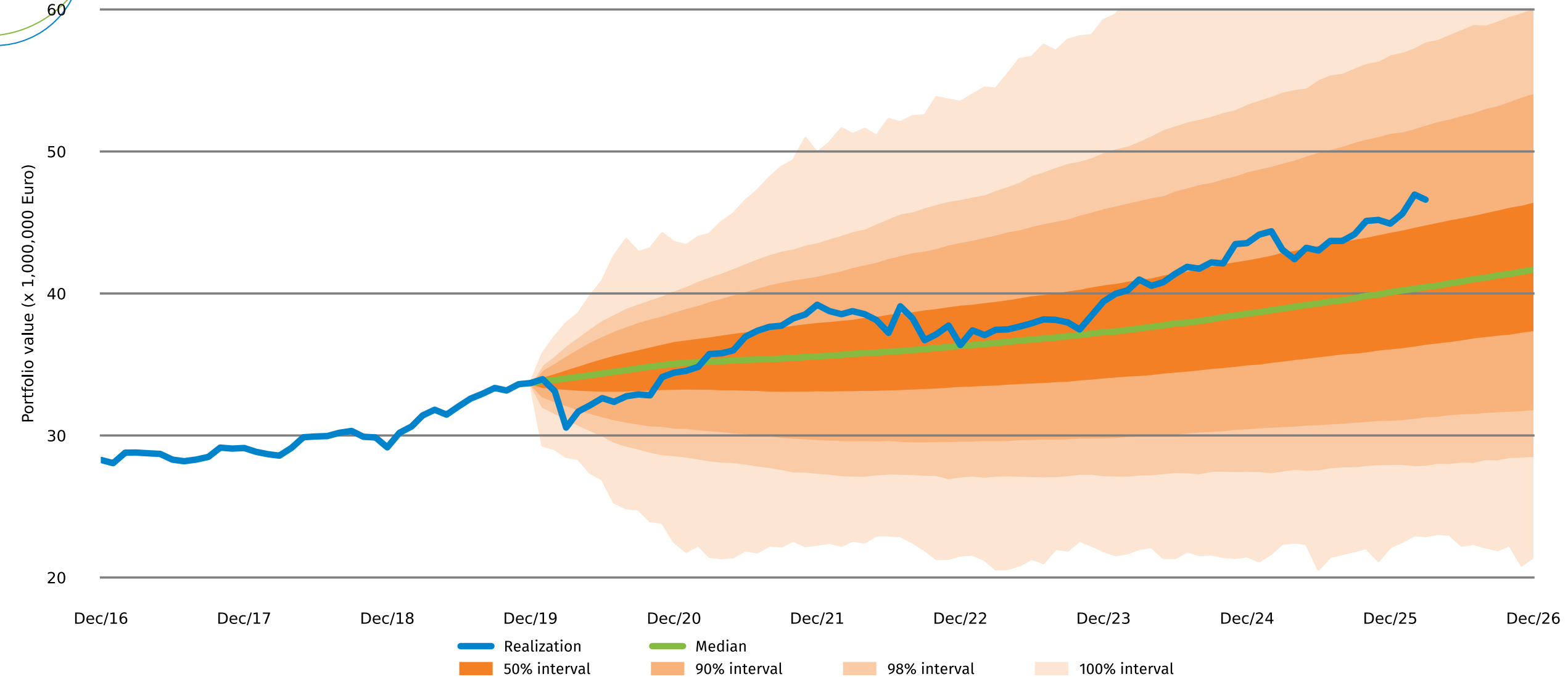
Radical uncertainty

- Lowered our **Mar20 OFS** growth, inflation, and interest rate outlook (“U-shaped recovery”):
 - Implied lower equity and other total returns.
 - Expected interest rate normalization to be delayed.
 - Increased asset volatility with 1.2x and 1.1x for projection year 1 resp. year 2.
- Covid stress scenarios
 - Constructed three Covid stresses: two deeper U-shapes and one W-shape.
- Recovery: quick, incomplete, uncertain, and termed K-shaped by many (sectoral divergence).



December 2019 scenario outlook

Monthly asset only portfolio value and risk according to a typical investment strategy of a European pension fund



Future
-
What's on our
roadmap?



Investment Universe feature

Improving the user journey

- The Investment Universe will:

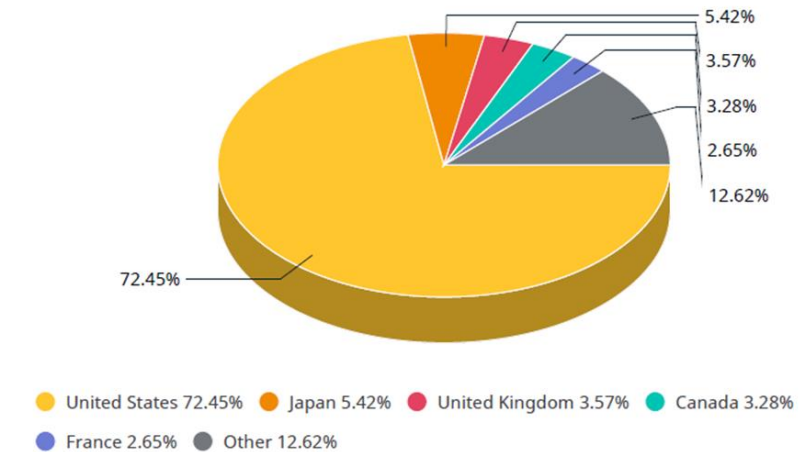
- Define the potential investments.
- Enable easy configuration of aggregate benchmarks.
- Offer a simple modelling toolkit.

- Benefits:

- Configure asset universe only once.
- More focus on balance sheet modelling at investment policy granularity.

MSCI World 100% Hedged to EUR Index (EUR)

COUNTRY WEIGHTS

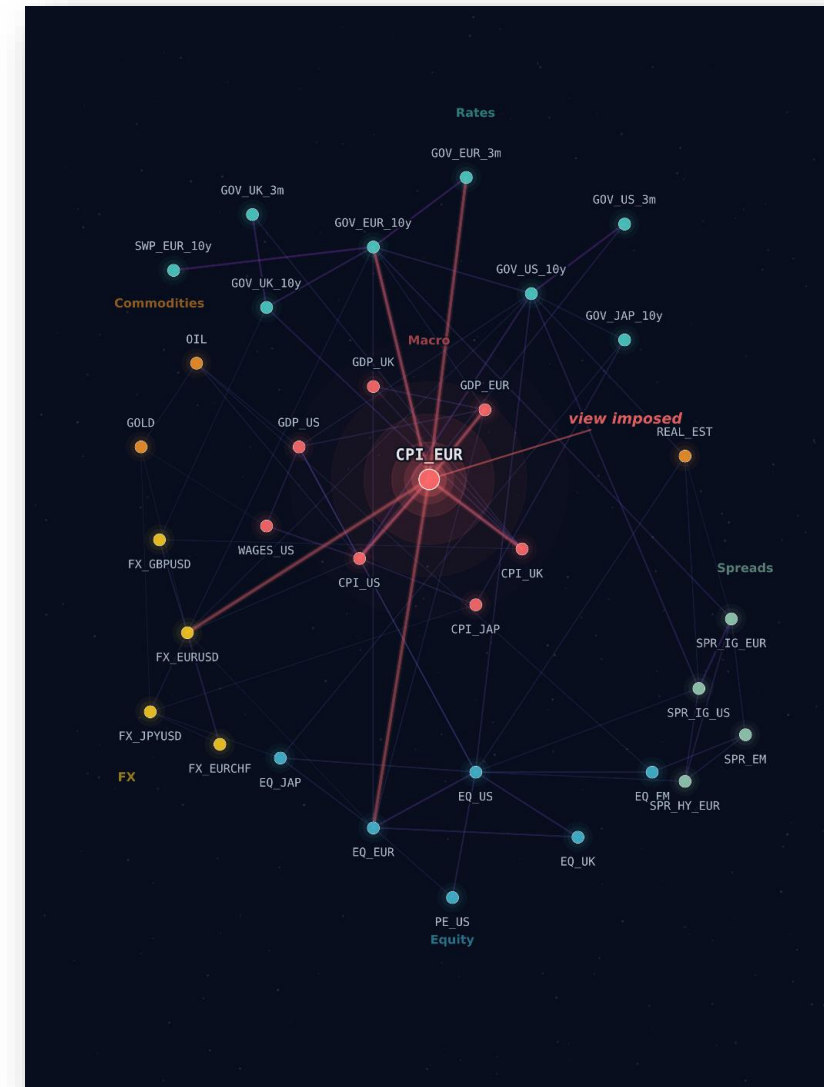


Bloomberg Fixed Income Indices											
Convertible	Municipal	Alternative Weight/ Alternative Beta	Multiverse/Aggregate				Inflation	Emerging Markets	Money Bond	Liberty Bond	Global
Global	US Municipal	Global	US Universal	Global Aggregate	Global High Yield	Other	Global	Global	Global	Global	Global
Global	US Municipal	Global	US Universal	Global Aggregate	Global High Yield	Other	Global	Global	Global	Global	Global
US	US Municipal	Global	US Universal	Global Aggregate	Global High Yield	Other	Global	Global	Global	Global	Global
EMEA	US Municipal	Global	US Universal	Global Aggregate	Global High Yield	Other	Global	Global	Global	Global	Global
AFAC	US Municipal	Global	US Universal	Global Aggregate	Global High Yield	Other	Global	Global	Global	Global	Global

Impose Views feature

Sub header

- Enables consistent translation of views across variables, asset classes, regions, and time horizons.
- Example: views on growth, interest rates, inflation **consistently translated** to asset class returns.
- Method is fast and achieves stable and consistent results.
- Starting up the pilot phase.



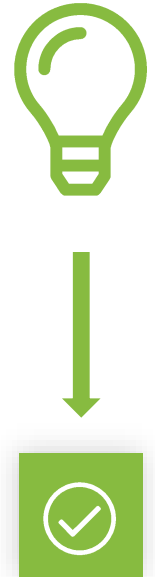
The end?
Or just the beginning?



It all starts with you, our clients!

Guiding principle

- For our innovation roadmap, your needs matter most!
- How do we then turn a roadmap into reality?
- Many of us contributed to what you've seen in this talk:
 - Software developers
 - Quantitative financial developers
 - Quantitative financial analysts
 - Business/Information analysts
 - Consultants
- Importantly, **your contribution is key** to validate along the way whether we got it right.
- We look forward to your feedback on the Investment Universe and Impose Views features!
 - To answer my question: surely **just the beginning**. 😊





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