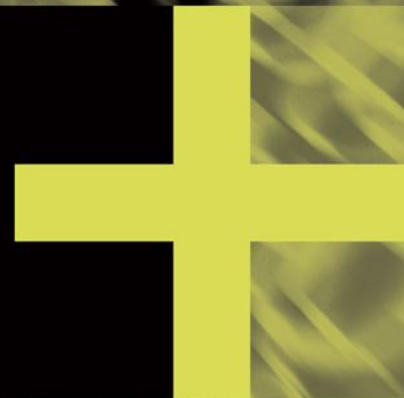


# Scenario Service

**barrie+hibbert**

Powering objectivity in the global financial services industry



## Scenario Service

Many risk and capital management problems faced by financial service companies, including measuring economic and regulatory capital, require the projection of complex cash flows and asset values.

Using our ESG we provide Scenarios to help you measure and manage capital and risk. Our Scenarios contain consistent and coherent projections of asset values under either Market-Consistent or Real-World assumptions. These projections can be used to help determine the fair-value of today's balance sheet, by providing Market-Consistent valuations of embedded guarantees, or long-term projections of asset returns.

If you already have your own internal model, use our Scenarios as a benchmark to double check your results and underlying assumptions.

### Benefits

- Access our world-class analytics, without having to choose or calibrate models, or run any software.
- Ensure the assumptions that underpin your calculations are thoroughly researched and regularly updated.
- Save time, money and resources by not having to build and maintain your own internal models and assumptions.

### The Service

We offer both one-off and subscription services giving you access to four quarterly calibrations a year. Included in the price of our transparent modelling solution is:

- A file with projected variables in .csv format.
- Definitions of the models used to project these variables.
- Documentation of the model parameters chosen and evidence of their goodness of fit.

Using a web-based form you can select from our standard Scenarios Sets or indicate your bespoke requirements and we will contact you to discuss prices and timescales.

We will then deliver your files to you via the web, either as a one off or as a quarterly or annual subscription service.

## Frequently Asked Questions

### What are Economic Scenarios?

Economic Scenarios are the outputs from multiple runs of our mathematical models which projects key economic variables including interest rates, inflation, bond prices, and equity and property indices. Using random shocks within a coherent economic framework we are able to simulate complex behaviour observed in the markets. We calibrate our models to tie them either to recent market prices or our opinion of long-term market behaviour.

### What do I get?

On top of our base Interest Rate package we offer optional Bond, Equity and Property packages. For each package we will provide an output file along with documentation that includes output file definitions, definitions of the models and the calibration used to create the output.

We offer the following outputs as standard:

Package	Outputs
Interest Rate	Nominal Spot Rates or Prices for risk-free zero-coupon bonds with 1-30 year terms Real Spot Rates or Prices for risk-free zero-coupon bonds for 1-30 year terms Nominal Cash Total Return or Total Return Index Change in Inflation or Inflation Index
Bond	For Govt, AAA,AA,A and BBB rated bond indices with 5, 10, 15 and 30 maturities: Total Return or Total Return Index Price Change or Price index Redemption Yield
Equity	Total Return or Total Return Index Price Change or Price index Dividend Yield
Property	Total Return or Total Return Index Price Change or Price index Rental Yield

We offer sample scenarios for you to download from our website: [www.barrhibb.com](http://www.barrhibb.com)

## Which calibration should you use?

Unless you are particularly interested in the past, e.g. for back-testing purposes, we would always recommend using our most recent calibrations. Currently we offer Market-Consistent and Real-World calibrations.

Our Market-Consistent Calibrations are used to derive a fair value for today's balance sheet. We have two different calibrations which use either Government Bonds or Swap rates as the underlying risk-free initial yield curve. We use market data from the last trading day of each calendar quarter (i.e. 31<sup>st</sup> March, 30<sup>th</sup> June, 30<sup>th</sup> September, 31<sup>st</sup> December).

Our Real-World Calibrations are used for long-term projections of asset returns for capital calculation and management. These calibrations are based on our team of economist's long-term assumptions of market behaviour. We also update these calibrations quarterly to reflect recent market changes.

## What economies do you cover?

### Market Consistent

Our Market-Consistent coverage depends on available data. We currently offer the current economy and package combinations:

Region	Economy	Package			
		Interest	Bonds	Equities	Property
Europe, Middle East & Africa	Eurozone	✓	✓	✓	✓
	Hungary	✓	✓		✓
	Poland	✓	✓		✓
	South Africa	✓	✓	✓	✓
	Switzerland	✓	✓	✓	✓
	UK	✓	✓	✓	✓
Asia Pacific	Australia	✓	✓	✓	✓
	Japan	✓	✓	✓	✓
Americas	Canada	✓	✓	✓	✓
	USA	✓	✓	✓	✓

We are always looking to add economies to our standard service, if we can source data. If you are interested in a different economy please contact us – details below.

## Real World

Since our Real World calibrations are based on unconditional long-term targets we are able to offer more economies. We currently offer the following economy package combinations:

Region	Economy	Package			
		Interest	Bonds	Equities	Property
Europe, Middle East And Africa	Czech Republic	✓	✓	✓	✓
	Denmark	✓	✓	✓	✓
	Eurozone	✓	✓	✓	✓
	Hungary	✓	✓	✓	✓
	Norway	✓	✓	✓	✓
	Poland	✓	✓	✓	✓
	South Africa	✓	✓	✓	✓
	Sweden	✓	✓	✓	✓
	Switzerland	✓	✓	✓	✓
	UK	✓	✓	✓	✓
Asia Pacific	Australia	✓	✓	✓	✓
	China	✓	✓		✓
	Hong Kong	✓	✓		✓
	India	✓	✓		✓
	Japan	✓	✓	✓	✓
	Malaysia	✓	✓		✓
	New Zealand	✓	✓	✓	✓
	S. Korea	✓	✓		✓
	Singapore	✓	✓	✓	✓
	Taiwan	✓	✓		✓
	Thailand	✓	✓		✓
Americas	Canada	✓	✓	✓	✓
	USA	✓	✓	✓	✓

We are always looking to add economies to our standard service. If you are interested in a different economy please contact us – details below.

## Which equity indices do you model?

### Market Consistent

We currently model eight economies using option implied volatilities from the following indices:

Economy	Index
Australia	ASX 200
Canada	TSX 60
Eurozone	ESTOXX 50
Japan	Nikkei 225
South Africa	TOP 40
Switzerland	SMI 20
UK	FTSE 100
USA	S&P500

For other indices within each economy we typically recommend that you use one of these as a proxy. However we can model specific indices as part of our bespoke service if required.

### Real World

Our methodology does not assume a given index, but rather examines the long-term behaviour of a typical large-to-mid cap portfolio. We understand that not everybody will agree with our house view and can calibrate to your requirements as part of our bespoke service if required.

## How do I request a Scenario?

You can request a Scenario Set on our website: [www.barrhibb.com](http://www.barrhibb.com)

We will process your request and assign a client representative who will contact you to find out a little more about how you want to use the Scenario Set to make sure this is the right offering for you. They will arrange for your Scenario Set to be created and also begin the payment process.

## How much will it cost?

The cost of the service will depend on what you want to use it for. Once you have submitted your request we will be in touch to find out a little more about your company and how you will be using it. The cost will also depend if you want a one-off Scenario Set or want to subscribe to a recurring service.

## What if I want something different?

While we are always looking to improve our standard offering, we understand that not everybody has the same needs and so offer a bespoke Scenario Service. If you want to model more than one economy simultaneously, have specific calibration requests or specific assets you want to model then we can help. Please contact us to discuss in more detail.

An alternative to this service is to buy our ESG to create your own scenarios. This will give you the full flexibility to model your own scenarios, explore different outputs and adjust calibration parameters. See our website or contact us for more information.

## Why Barrie & Hibbert?

Barrie & Hibbert was established in 1995 by John Hibbert and Andrew Barrie. We provide a range of software modelling tools, research and consulting services to a wide range of financial institutions and strategic partners.

Barrie & Hibbert's primary focus is the identification, quantification and management of financial risk in savings and investment products, institutional portfolios and life and pensions balance sheets. Barrie & Hibbert has developed a powerful library of financial models that can be used to understand the complicated joint financial relationships that drive uncertainty in long-term financial plans.

Collectively our staff of leading academics, quantitative analysts, actuaries and software engineers offer a depth and breadth of expertise combined with an unrivalled track record of experience in implementing risk solutions for financial institutions around the world.

Our asset and product modelling capability has been developed over the last 13 years resulting in Barrie & Hibbert becoming a global market leader in stochastic asset modelling services.

Barrie & Hibbert is privately owned and employs around 100 staff across locations in the UK, North America and Asia.

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