Quick Start Guide
Fund Manager – Sensitivities and Exposures

This guide will explain how to create and maintain user-defined funds, specifically of the Sensitivities and Exposures type.

Updated February 2020

PFaroe

RiskFirst

A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

This guide will go through the set up and update of custom funds - **Sensitivities and Exposures**

Advantages:
- Allows for LDI-type cashflow matching
- Create a mixture of risk factor exposures and sensitivities within a single fund

Disadvantages:
- Requires more granular data than the other custom fund types
- Modeling risk factor exposures can often be easily achieved through the Fund of Funds type

To get started, navigate to https://funds.pfaroe.com

Click **Create Fund**

Fund Management

Multi-Fund Update | + Create Fund

Show [20 ⌄] entries | flemming

Fund		Type	Scales	Opened	Closed	Updated By				
Alternatives		Fund of Funds	Market Value	12/31/2018	Ongoing	Amanda.Flemming	☰	📋	✎	✖

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Choose from available selections below

Create New Fund   ✕

Define the following properties for your fund. Hover over each for more information.

Name:	Sensitivities Test
Type:	Sensitivities and Exposures ▾
Base Unit:	Market Value ▾
Projection Method:	Buy and Hold ▾
Inferred Cash Method:	Cash on Account ▾
Currency:	USD ▾
Grouping:	Fixed Income ▾
Open Date:	12/31/2019 📅
Close Date:	○ 📅 ⦿ Ongoing

Projection Method:
- **Buy and Hold** - assets are held until the last cashflow is realized. This shortens the duration of the fund.
- **Reinvestment** - assets are held for a unit of time and the return is calculated. The duration stays constant throughout time

Inferred Cash Method:
- **Cash on Account** - captures the difference between the user defined market value and the implied market value using a single cash amount
- **Floating Cashflow** - captures the difference using cashflows that match the cashflow profile of the sensitivities

Choose date the fund will appear in PFaroe then choose and end date or ongoing

RiskFirst
A Moody's Analytics Company

How to – Fund Manager – Sensitivities & Exposures

Click through the asset hierarchy to define how the fund will appear within PFaroe's asset hierarchy.
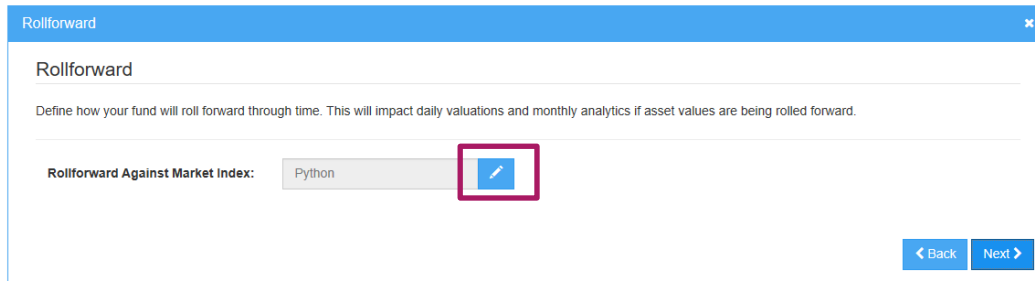
HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Rollforward Against Market Index will rollforward the fund based on a user defined market index expression. Click the ✎ icon below

To model derivatives, enter '1' as the market index expression.

To link to a daily ticker, click the example expression to pre-populate the formula

Next, click **Available Market Indices**

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

The full list of available funds will appear. To reduce the selection size, simply start typing the name of the fund in the search bar. Once the fund is found, simply click on the **Code** name to insert into the formula.

Note: If the fund is not available in the available market indices list, please email support@riskfirst.com with the name of the fund and the ticker.
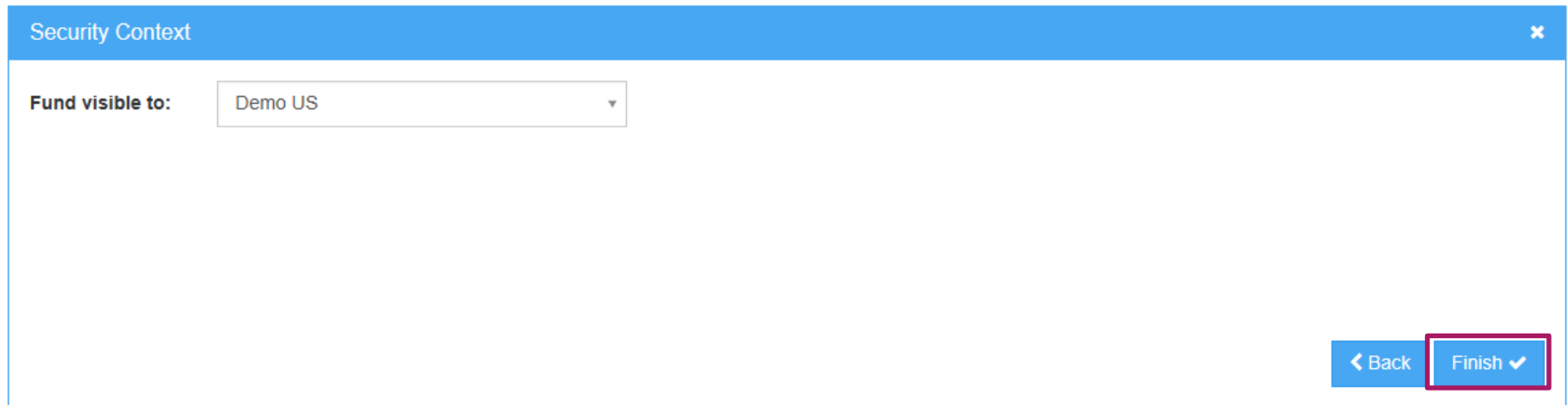
If available in the Thompson Reuters database, the fund will be loaded for use

Click **Validate** to confirm the formula is working then click **Confirm**

How to – Fund Manager – Sensitivities & Exposures

The **Security Context** step will appear for clients that can make funds within multiple user groups. Select the appropriate group that the fund is intended to be visible to from the dropdown box.

This step is skipped for clients that do not need the additional permissions.

Click **Finish**

How to – Fund Manager – Sensitivities & Exposures

It is important to update funds to best reflect the fund that is replicated. Regular updates also improve processing times within the system.

Click **Create Update** and choose from the below options to model the fund

01s update defined by PV01s, CR01s, and IE01s

Risk Factor updated defined by the fund's market value risk exposure

Cashflow update defined by the cashflow profile of the fund

Detailed setups for each option provided on the next few slides

How to – Fund Manager – Sensitivities & Exposures

Select **01s**

Choose a **Start Date** and an End Date or Ongoing

It is useful to enter a Description, but it is not required to proceed.

Click **Next**

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Select the type(s) of sensitivities to use by clicking the box next to the appropriate options. Choose the risk-free curve that each sensitivity is calculated from.

For each sensitivity selected, enter the **Spread** (the market value weighted z-spread for that CR01 weighting.)

Sensitivity Setup

Shift Size (bps): `1`

Sensitivity		Curve/Location		Spread	
Interest Rates	☑	Treasury / US	▼		
Inflation	☑	CPI / US	▼		
Government - Sovereign	☐	Select a curve	▼		bps
Non-government - AAA	☑	Treasury / US	▼	35	bps
Non-government - AA	☐	Select a curve	▼		bps
Non-government - A	☐	Select a curve	▼		bps
Non-government - BBB	☑	Treasury / US	▼	20	bps
Non-government - CDS	☐	Select a curve	▼		bps
Non-government - Derivatives	☑	Treasury / US	▼	55	bps

Click **Next**

‹ Back   Next ›

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Choose **Interpolation Method**
- **Bullet -** cashflows inferred from the sensitivities will be placed at exactly the tenor where the sensitivity was entered
- **Flat 01s -** sensitivities that span multiple tenors (a bucket). The sensitivities are assumed equal over each of the tenors by dividing the sensitivity for the bucket by the width of the bucket.

Select the Bucket Frequency to define the tenors that are bumped to generate the PV01, CR01, and IE01 data.

Bucket Start Points

| Interpolation Method: | Flat 01s ▾ | Bucket Frequency: | Every Five Years ▾ |

+ Add Bucket

0	40 ✖	80 ✖
5 ✖	45 ✖	85 ✖
10 ✖	50 ✖	90 ✖
15 ✖	55 ✖	95 ✖
20 ✖	60 ✖	
25 ✖	65 ✖	
30 ✖	70 ✖	
35 ✖	75 ✖	

Click **Next**

< Back **Next >**

RiskFirst
A Moody's Analytics Company

How to – Fund Manager – Sensitivities & Exposures

Click **Download Template** then paste in white space below

PV01s/IE01s/CR01s

Download Template

Download template, fill in and paste table here.

Sensitivity Market Value: ⦿   NaN   USD   ○ Use implied market value   USD

‹ Back   Next ›

Enter a **Sensitivity Market Value** associated with the PV01s/CR01s/IE01s or choose the **implied market value**, generated from the pasted sensitivity data.

Click **Next**

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

These are fund metrics calculated based on the cashflows implied by the sensitivities. Users have the option to override any of the metrics by clicking the radial buttons below the calculation.

Overrides do not change the underlying cashflows but do govern the value displayed in the assets module.

Effective Duration

⦿ **Calculate from sensitivities:** 12.833321 yrs

○ **Enter override:** yrs

Yield

⦿ **Calculate from sensitivities:** 2.203665 %

○ **Enter override:** %

Modified Duration

⦿ **Calculate from sensitivities:** 12.832823 yrs

○ **Enter override:** yrs

Convexity

⦿ **Calculate from sensitivities:** 124.321991

○ **Enter override:**

Spread

⦿ **Calculate from sensitivities:** 0 bps

○ **Enter override:** bps

Credit Duration

⦿ **Calculate from sensitivities:** 0 yrs

○ **Enter override:** yrs

‹ Back   Finish ✔

Click **Finish**

RiskFirst
A Moody's Analytics Company

How to – Fund Manager – Sensitivities & Exposures

Select **Risk Factor**

Choose a **Start Date** and an End Date or Ongoing

It is useful to enter a Description, but it is not required to proceed.

Click **Next**

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Enter the market value exposed to each risk factor. Multiple risk factors can be selected

Risk Factor Configuration

Aggregate	>	European High Yield Credit	
Alternative	>	European Leveraged Loans	
Alternatives	>	Global High Yield Credit	
Cash	>	Loan Fund	
Credit	>	Loan Fund (US)	
Equities	>	US High Yield Credit	✔
Equity	>	US MBS	
Fixed Income	>		
Property	>		
Real Estate	>		
TIPS	>		
Treasuries	>		

Risk Factors (USD)

Aggregate / US Aggregates All Mat	500,000 ✖
Treasuries / US Treasuries 10+ Years	100,000 ✖
Treasuries / US Treasuries 5-10 Years	150,000 ✖
Fixed Income / US High Yield Credit	250,000 ✖

Total   **1,000,000**

< Back   Finish ✔

Click **Finish**

RiskFirst
A Moody's Analytics Company

15

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Select **Cashflow**

Choose a **Start Date** and an End Date or Ongoing

It is useful to enter a Description, but it is not required to proceed.

Click **Next**

How to – Fund Manager – Sensitivities & Exposures

Select the **Inflation Reference Curve**

Select the **Launch Date** (inception date of the fund)

Sensitivity Setup

Inflation Reference Curve :	CPI / US	× ▾
Launch Date :	12/31/2011	📅

Sensitivity		Curve/Location		Spread		Inflation Linked	Cashflows Inflated
Interest Rates	☑	Treasury / US	▾			☑	☐
Government - Sovereign	☑	Treasury / US	▾		bps	☑	☐
Non-government - AAA	☑	Treasury / US	▾		bps	☐	☐
Non-government - AA	☑	Treasury / US	▾		bps	☐	☐
Non-government - A	☐	Select a curve	▾		bps	☐	☐
Non-government - BBB	☑	Treasury / US	▾		bps	☐	☐
Non-government - CDS	☐	Select a curve	▾		bps	☐	☐
Non-government - Derivatives	☐	Select a curve	▾		bps	☐	☐
Non-government - Other	☐	Select a curve	▾		bps	☐	☐

‹ Back   Next ›

Select the type(s) of sensitivities by clicking the checkboxes next to the appropriate options. Choose the risk-free curve that each sensitivity is calculated from.

For each sensitivity selected, enter the **Spread** (the market value weighted z-spread for that CR01 weighting.)

Click **Next**

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

Click **Download Template** then paste in white space below

PV01s/IE01s/CR01s

Download Template

Download template, fill in and paste table here.

Sensitivity Market Value: NaN   USD   ○ Use implied market value   USD

‹ Back   Next ›

Enter a **Sensitivity Market Value** associated with the cashflows or choose the **implied market value**, generated from the pasted sensitivity data.

Click **Next**

RiskFirst
A Moody's Analytics Company

How to – Fund Manager – Sensitivities & Exposures

These are fund metrics calculated based on the cashflows implied by the sensitivities. Users have the option to override any of the metrics by clicking the radial buttons below the calculation.

Overrides don't change the underlying cashflows but do govern the value displayed on the Assets module.

Effective Duration

◉ **Calculate from sensitivities:**   2.437360   yrs

○ **Enter override:**   yrs

Yield

◉ **Calculate from sensitivities:**   1.854161   %

○ **Enter override:**   %

Modified Duration

◉ **Calculate from sensitivities:**   2.437360   yrs

○ **Enter override:**   yrs

Convexity

◉ **Calculate from sensitivities:**   4.768422

○ **Enter override:**

Spread

◉ **Calculate from sensitivities:**   25.00002   bps

○ **Enter override:**   bps

Credit Duration

◉ **Calculate from sensitivities:**   2.437362   yrs

○ **Enter override:**   yrs

❮ Back   Finish ✔

Click **Finish** to complete the update.

RiskFirst
A Moody's Analytics Company

HOW TO – FUND MANAGER – SENSITIVITIES & EXPOSURES

The fund will need to be released after each update to show in PFaroe. Click the ➡ to release the fund. Once successfully released, the arrow will turn the other direction ↩

Fund Updates

The following fund updates are available for **Sensitivities Test**

+ Create Update ▾

Fund Start Date:	12/31/2019	**Fund End Date:**	Ongoing
Fund Type:	Sensitivities and Exposures	**Base Unit:**	Market Value
Currency:	USD	**Picker Name:**	Sensitivities Test
Grouping:	Fixed Income	**Hierarchy:**	Amanda Test/
Projection Method:	Buy and Hold		

Updates

Show [10 ▾] entries

Search ... 🔍

Start Date	End Date	Description	Status	Created	User	
12/31/2019	Ongoing		Pending	02/24/2020	Amanda.Flemming	☰ ➡ ✎ ✖

Showing 1 to 1 of 1 entries

Previous | 1 | Next

‹ Back

RiskFirst
A Moody's Analytics Company

FAQ

The market index I want to use isn't available in Fund Manager. What can I do? Please contact support with the specific index you're trying to see. If we can access the index data, we will do our best to make the index available to Fund Manager.

My custom fund shows up within PFaroe but is unavailable for the analytics I am trying to run. Why? First, check to see that the fund has been updated within the date range you are trying to use it. Secondly, if you're trying to use it in Risk and ALM and the update was only recently made, please wait about 30 minutes for the fund to appear. In other modules, it should be available right away. As always, if you are still having trouble, contact support.

What are the 01s: PV01s, CR01s, and IE01s?
- **PV01s -** sensitivities to changes in risk-free interest rates
- **CR01s -** sensitivities to changes in credit yields
- **IE01s -** are sensitivities to changes in inflation expectation rates

I'm updating a derivative. Are there any special considerations when working with derivatives? Yes. The **Base Unit** on the initial set up screen should be Notional rather than Market Value and the **Market Index Expression** on the Rollforward screen should be set to '1'.
- The Sensitivity Market Value corresponds to the market value of the fund given the amount entered in the notional field below is allocated to the fund.
- The value that the fund's PV01s/CR01s/IE01s are based on the value in the notional field

Can I update more than one fund at once? Yes, utilize the **Multi-Fund Update** feature, which can be accessed on the Fund Manager landing page. You'll select a Start Date and End Date for updates, generate a template, and fill out the required fields in Excel. Once completed, the template can be uploaded, at which time you can view and release updates to the funds on an individual or mass basis.

RiskFirst
A Moody's Analytics Company