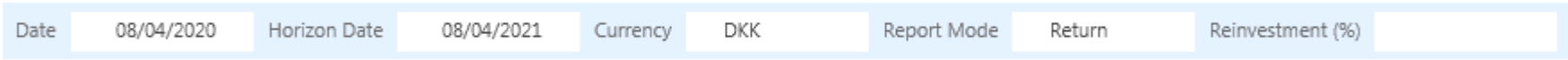
Trade Design

Description

*The **Trade Design** report calculates horizon return or a risk ladder for a portfolio. The weight of each instrument can be dynamically changed to analyse its effect on the overall portfolio.*

Settings

It is possible to specify the following settings



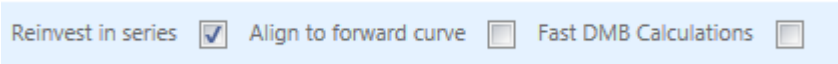
Date: Defines the date for when the calculations are done. Default is today i.e. real-time.

Horizon Date: The date for when horizon key figures should be calculated and marks the end date for the return period.

Currency: Specifies the currency in which the certain key figures, such as horizon return, is calculated

Report Mode: *Return* calculates the return between *Date* and *Horizon Date* and *Risk* calculates a delta ladder on *Date*.

Reinvestment: User can override the reinvestment rate of cash flows. If empty, they will be reinvested at the relevant interbank offered rate or repo rate.

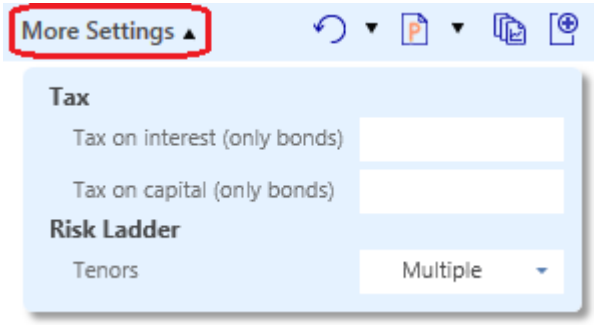


Reinvest in series: When enabled, cash flows will be reinvested in the same bond series if possible. If it is not, then the reinvestment rate above will be used.

Align to forward curve: When enabled, the interest rate curve used for horizon calculations will be the relevant forward curve.

Fast DMB Calculations: Reduces the calculation time for Danish Mortgage Bonds at the cost of precision.

More settings



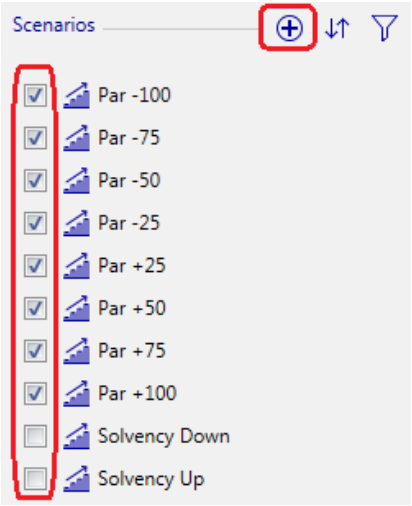
Tax on interest (only bonds): When a rate is entered, interest payments during the horizon period are taxed using this rate.

Tax on capital (only bonds): When a rate is entered, capital gains during the horizon period are taxed using this rate.

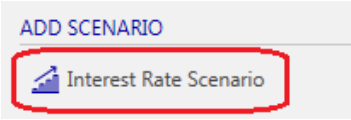
Tenors: When Risk is chosen in Report Mode, a delta ladder is calculated for the points specified in Tenors.

Interest rate scenarios

In the bottom left, interest rate scenarios can be enabled / disabled.



Selecting the + sign allows new scenarios to be created by choosing Interest Rate Scenario



By default the new scenarios will shift all curves (discount and fixing curve for potentially both legs of all instruments) for all currencies upwards by 100 basis points. This can be changed to fit the needs of the analysis.

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Solvency up and down shifts are defined by the European commission as follows:

SCR.5.29. The altered term structures are derived by multiplying the current interest rate curve by $(1+s^{up})$ and $(1+s^{down})$, where both the upward stress $s^{up}(t)$ and the downward stress $s^{down}(t)$ for individual maturities t are specified as follows:

Maturity t (years)	*relative change $s^{up}(t)$*	*relative change $s^{down}(t)$*
0.25	70%	-75%
0.5	70%	-75%
1	70%	-75%
2	70%	-65%
3	64%	-56%
4	59%	-50%
5	55%	-46%
6	52%	-42%
7	49%	-39%
8	47%	-36%
9	44%	-33%
10	42%	-31%
11	39%	-30%
12	37%	-29%
13	35%	-28%
14	34%	-28%
15	33%	-27%
16	31%	-28%
17	30%	-28%
18	29%	-28%
19	27%	-29%
20	26%	-29%
21	26%	-29%
22	26%	-30%
23	26%	-30%
24	26%	-30%
25	26%	-30%
30	25%	-30%

For example, the "stressed" 15-year interest rate $R_1(15)$ in the upward stress scenario is determined as

$$R_1(15) = R_0(15) \bullet (1 + 0.33)$$

where $R_0(15)$ is the 15-year interest rate based on the current term structure.

Report elements

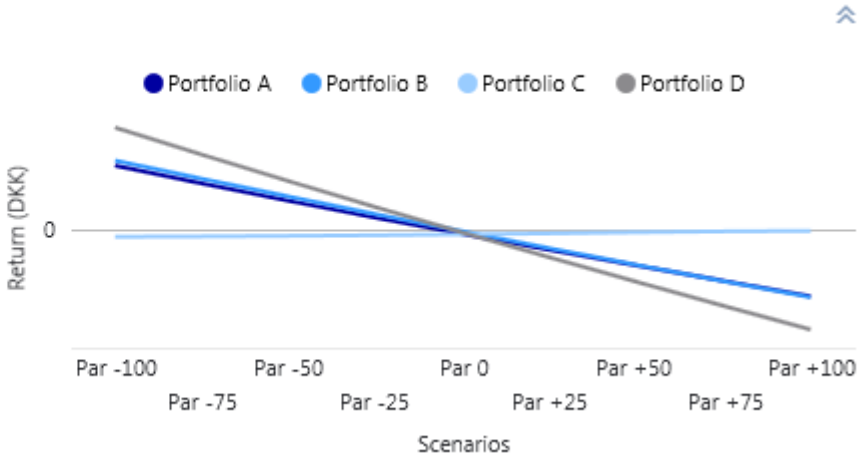
The report elements are described below.

Portfolio Horizon Return (Return mode)

This table calculates horizon return based on the portfolio weights under Instrument Overview for each scenario.

PORTFOLIO HORIZON RETURN (DKK)

Scenario	Portfolio A	Portfolio B	Portfolio C	Portfolio D
Par -100	*48.84*	*52.54*	*-3.70*	*76.96*
Par -75	*35.62*	*39.09*	*-3.47*	*56.90*
Par -50	*22.77*	*25.88*	*-3.11*	*37.27*
Par -25	*10.32*	*12.91*	*-2.60*	*18.07*
Par 0	*-1.76*	*0.18*	*-1.94*	*-0.70*
Par +25	*-13.51*	*-12.32*	*-1.19*	*-19.07*
Par +50	*-25.02*	*-24.59*	*-0.43*	*-37.10*
Par +75	*-36.41*	*-36.64*	*0.23*	*-54.85*
Par +100	*-47.83*	*-48.47*	*0.64*	*-72.39*



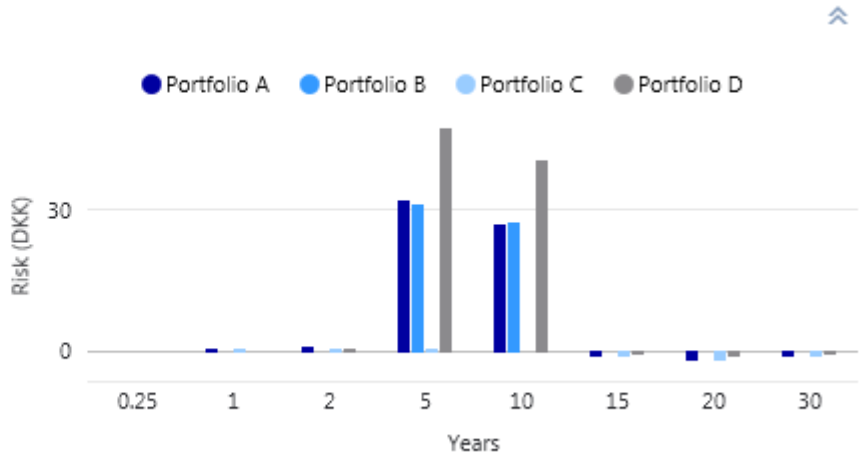
The horizon return is converted to the report's currency set under Settings.

Portfolio Risk (Risk mode)

This table calculates a risk, bpv, ladder based on the portfolio weights under Instrument Overview.

PORTFOLIO RISK (DKK)

Year	Portfolio A	Portfolio B	Portfolio C	Portfolio D
0.25	*0.14*	*0.01*	*0.13*	*0.08*
1	*0.37*	*0.04*	*0.33*	*0.22*
2	*0.87*	*0.20*	*0.66*	*0.64*
5	*31.63*	*31.03*	*0.59*	*46.84*
10	*26.80*	*26.93*	*-0.12*	*40.33*
15	*-0.75*	*0.00*	*-0.75*	*-0.38*
20	*-1.48*	*0.00*	*-1.48*	*-0.74*
30	*-0.60*	*0.00*	*-0.60*	*-0.30*



The risk is converted to the report's currency set under Settings.

Portfolio Key figures

The table shows the aggregated portfolio key figures calculated using the weights in Instrument Overview table.

PORTFOLIO KEYFIGURES (DKK)

Keyfigure	Portfolio A	Portfolio B	Portfolio C	Portfolio D
PV	*911.22*	*803.50*	*107.72*	*1,259.11*
BPV	*57.03*	*58.21*	*-1.18*	*86.72*
CVX	*5.62*	*4.85*	*0.77*	*7.66*
Vega	*0.06*		*0.06*	*0.03*

Instrument Overview

The table shows key figures for each instrument. Changing the weights automatically updates the report.

INSTRUMENT OVERVIEW (DKK)

Name	PV	BPV	CVX	Vega	Weight A	Weight B	Weight C	Weight D
DE 0.5 15Aug27	803.50	58.21	4.85		100.00	**100.00**		**150.00**
NDA 3 01Oct47 (2)	107.72	-1.18	0.77	0.06	100.00		**100.00**	**50.00**