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PORTMAN Pricing Curves

How to get started

Vitec Aloc/MEGT Version 2.0 This document is based on the underlying system PORTMAN 7.24

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1. Background

PORTMAN Pricing Curves are used for valuation and calculation of key figures for instruments and simulation of interest rate scenarios. The module offers the possibility of building advanced structures where a market curve is adjusted for e.g. Credit- and liquidity spread. However, you also have the option to load pre-generated Pricing Curves from external systems.

2. Overview

The following terms are used:

- Zero curve: zero coupon yield curve, which is either loaded or calculated by PORTMAN based on market data
- Spread curve, which is used to adjust for e.g. credit or liquidity risk and is loaded from an external source or created manually
- Pricing curve, which is one zero curve and an arbitrary number of spread curves.

It is Pricing Curves that are used in PORTMAN's other modules, while zero and spread curves only are used as the building blocks for constructing the Pricing Curves.

The principle is illustrated in the figure below, where a pricing curve (the purple line) is constructed as the sum of the zero curve (the blue line) and several spread curves (the red and green line).



The flow for constructing a price curve is as follows:

- 1. Create spread points to be used by the spread curve
- 2. Create a spread curve based on the newly created spread points
- 3. Create a composition based on the newly created spread curve
- 4. Create zero points to be used by the spread curve
- 5. Create a zero curve based on the newly created zero points
- 6. Create a composition based on the newly created zero curve
- Create a pricing curve, by first adding a zero curve and thereafter add any number of spread curves (If the pricing curve only consists of a zero curve, the spread curve can be omitted)



3. Enter basic data

The following section describes how a complete pricing curve can be registered using the PORTMAN user interface. However, basic data, interest rates and spreads can also be imported. The import is described in section 6.

If you do not need to use a spread curve, this part can be skipped. Spread curves can always be added and modified later.

3.1. Spread curve

A spread curve is a collection of spread points, which together form a spread curve.

3.1.1. Spread point

The creation and maintenance of spread points are located in the context bar 'points' in the pricing curve module.

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Ľ	SpreadPoint_No2	SpreadPoint 2 years		Copenhagen		Unadjusted	
ing curves	SpreadPoint_No3	SpreadPoint 3 years		Copenhagen	Act/Act ISMA	Unadjusted	
	SpreadPoint_No4	SpreadPoint 5 years		Copenhagen	Act/Act ISDA	Unadjusted	
	SpreadPoint_No5	SpreadPoint 7 years		Copenhagen	Act/Act AFB	Unadjusted	
	SpreadPoint_No6	SpreadPoint 10 years		Copenhagen	Unadjusted	Unadjusted	

A spread point has basic data consisting of an ID, Description, Maturity, Calendar and day conventions, and Value days.

SpreadPoint_No1
1 Year 🔫
Unadjusted

3.1.2. Spread curve

A spread curve consists partly of basic data and partly of historic data of which point the spread curve has been composed of. Thus, it is possible to adjust which spreads that should be included in the spread curve without having to create a new spread curve.

Spread curves are created and maintained under the quick menu 'Pricing Curves' - 'Spread curves'. The information linked to spread curves are basic data for the spread curve itself, alongside 'compositions' and 'spread curve points'.

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The spread curve consists of some basic data in the form of ID and whether the curve should be added before or after any bootstrapping of the zero curves it is linked to. Furthermore, several spread points can be specified on basic data.

The curve can then be edited by right-clicking and selecting 'Edit spread curve basic data' or by activating the 'pen' in the view panel.

Once the basic data for the curve is created, the spreads are added to the spread curve by using the 'plus' icon on a curve and selecting 'Add spread point'. A list of available spread point is shown – only spread points that have not already been attached is shown in the list.

Spread curve ID			
Description	INFO:DiscSpread	2 Simpel	
Application	Before Calculatio		
Provider	Bloomberg		
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Spread point ID	Sprea Maturity	ad points	+ i ≡
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Spread point ID SpreadPoint_No1 SpreadPoint_No3 SpreadPoint_No4 SpreadPoint_No5	Sprea Maturity 1Y 3Y 5Y 7Y	ad points	Description SpreadPoint 1 year SpreadPoint 3 years SpreadPoint 5 years SpreadPoint 7 years

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			+
Spread point ID	 Maturity 	Description	
SpreadPoint_No2	2Y	SpreadPoint	2 years
Spread point ID SpreadPoint_No2	Maturity 2Y	Description SpreadPoint	2 years

If the spread point does not exist, the user can add by clicking on the 'plus' sign. Then the user can fill out the basic data for the spread point:

Spread point ID			
Description			
Maturity	Please enter a spread point	ID 👻	
Calendar	Copenhagen		
Calendar convention	Act/Act ISDA		
Business day convention			
Value days			

The 'composition' card records points associated with the curve at that date and the corresponding values for the spreads. Some spreads are updated on a daily basis, while others are only available on an ad hoc basis. When calculating a pricing curve, the latest spreads are used in relation to the calculation date.

	Composit	ion - Edit	1
Spread curve ID			
As of date			
	Spread cu	rve points	+/∎ ≡
Spread point ID	Maturity 🔺	Description	Spread pct
SpreadPoint_No1		SpreadPoint 1 year	0,025000
SpreadPoint_No3		SpreadPoint 3 ye	0,035000
SpreadPoint_No4		SpreadPoint 5 ye	0,045000
SpreadPoint_No5		SpreadPoint 7 ye	
SpreadPoint_No6		SpreadPoint 10 y	

Note: When editing a spread curve, make sure to create a new composition in order for the changes to have effect from the desired date.

3.2. Zero curve

A zero curve is a collection of points, which together form a zero curve.

3.2.1. Zero curve points

The creation and maintenance of zero points are located in the context bar 'points' inside the pricing curve module.

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	Zero points Sprea	d points					
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	RENTEPUNKT_2	RENTEPUNKT_2: 3M Libor		Copenhagen		Unadjusted	
rves	RENTEPUNKT_3	RENTEPUNKT_2: 3Y Libor		Copenhagen		Unadjusted	
	RNT_1_EUR	RENTEPUNKT_1		Copenhagen		Unadjusted	
	RNT_1_JPY	RENTEPUNKT_1		Copenhagen		Unadjusted	
	RNT_1_USD	RENTEPUNKT_1		Copenhagen		Unadjusted	
	RNT_2_EUR	RENTEPUNKT_2: 3M Libor		Copenhagen		Unadjusted	
	RNT_2_JPY	RENTEPUNKT_2: 3M Libor		Copenhagen		Unadjusted	
	RNT_2_USD	RENTEPUNKT_2: 3M Libor		Copenhagen		Unadjusted	
	RNT_3_EUR	RENTEPUNKT_2: 3Y Libor		Copenhagen		Unadjusted	
	RNT_3_JPY	RENTEPUNKT_2: 3Y Libor		Copenhagen		Unadjusted	
	RNT_3_USD	RENTEPUNKT_2: 3Y Libor		Copenhagen		Unadjusted	
		Rentepkt day		Copenhagen		Unadjusted	
		Rentepkt month				Unadjusted	
	RNTPKT_3	Rentepkt year				Unadjusted	

zero point has basic data consisting of an ID, Description, Maturity, Calendar and day conventions, and Value days.

1	Zero poin	t - Edit	<u> </u>
Zero point ID			
Description		Info:RentepunktNr. 1 Kik Bloomberg NO	
Maturity		12 Day	
Calendar		Copenhagen	
Calendar convention		E30/360	
Business day convention			
Value days			

3.2.2. Zero curve

A zero curve consists partly of basic data and partly of historic data of which points the zero curve has been composed of. Therefore, it is possible to change which points that are included in the zero curve without having to create a new zero curve – This is done in the compositions card, which are described further below.

Basic data for the zero curve is found under the context bar 'Zero curves' in the pricing curve module. Basic data consists of, among other things, an ID, description, currency, which interpolation and extrapolation the curves has and an indication of whether the curve is calculated in an external system and imported to PORTMAN (Supplied¹) or must be generated from market data (Bootstrap/market rate).

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¹ PORTMAN is currently supporting integration with Bloomberg

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The basic data for the two zero curves (Supplied, Bootstrap/market rate) can be edited on their respective tab inside the zero curve tab.

3.2.3. Zero curve - Supplied

If the curve was created under the tab 'Supplied' it will have the following characteristics.



Several zero points are linked to a zero curve by right-clicking and selecting Edit zero curve. This dialogue shows items linked to the curve, as well as interest rates for the maturities. Normally, interest rates will be registered on a daily basis, but if this is not the case - for example during weekends - it is ok with gaps in the time series. When a pricing curve is calculated, the latest interest rates are used in relation to the calculation date.

zero curve ID				
Description	INFO:BASIC_ZERO	_CURVE_JPY_E	XTERNALLY_SU	
Currency code				
Interpolation	Linear 👻	Extrapolatio		
Provider	Bloomberg			
	Zero	points	+ i	i =
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Zero point ID	▲ Maturity	Description
RENTEPUNKT_1		Info:RentepunktNr. 1 Kil
RENTEPUNKT_2		RENTEPUNKT_2: 3M Lib
RENTEPUNKT_3		RENTEPUNKT_2: 3Y Libo
RNT_1_EUR		RENTEPUNKT_1
RNT_1_USD		RENTEPUNKT_1
RNT_2_EUR	3M	RENTEPUNKT_2: 3M Lib
RNT_2_USD	3M	RENTEPUNKT_2: 3M Lib
RNT_3_EUR		RENTEPUNKT_2: 3Y Libo
RNT_3_USD		RENTEPUNKT_2: 3Y Libo
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The 'composition' card shows the points associated with the curve at a specific date and the corresponding values for the zero point at that time.

٠	Compositions	+/==
As of date		
15-03-2019		
15-02-2019		
15-01-2019		
15-10-2018		
31-12-2017		

If changes occur to the compositions of the zero curve, it is important to register the changes as new compositions, in order for the changes to have an effect.

3.2.4. Zero curve – Bootstrap/market rate

If the curve was created under the tab 'Bootstrap/market rate' it will have the following characteristics. Market rates are linked to a zero curve by creating a composition at a desired date. The following market rates type can be used: *Money market rate, swap rate, IMM OFF.*

	ap / marked are										•	Zero curve - Preview	
\$				Zerc	curves				+/==	-	Zero curve ID		
ro curve ID	+ Description		Currency code		Provider		Interpolation	Extrapolation				DBICIN/CLUB/E MarketBate FUB	
sicCurve EUR	PRICINGCUR	VE MarketRate EUR	EUR		Bloomberg		Linear	Flat			Description	PRICINGCORVE Marketrate EUR	
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C 43te 1-03-2019 -02-2019 -02-2019 -03-2019	Compositions	+/:=	EURSWAPPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY EURSWAPY	Name PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE PRICINGCURVE	Mahunty 1D 1W 1M 1M 1Y 2Y 3Y 4Y 5Y 6Y 6Y 7Y 8Y 9Y 9Y 10Y	Zero curve Money Maret R., Money Maret R., Money Maret R., Money Maret R., Swap Rate Swap Rate	Instruments Catendar convent. Imm 1: Act_380 Act_380	rm Coupon Neguri 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	y Calendar Copenhag				
C 4ate 23-2019 22-2019 22-2019 22-2019	Compositions	+/==	Instrument I/D EURCASH10 EURCASH10 EURCASH1W EURCASH1W EURCASH1W EURCASH1W EURCASH2W EURCASH2W EURCASH2W EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y EURCAMP2Y	Name PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE PRCINGCUIRVE	Maturity 1D 1W 1M 6M 6M 1Y 2Y 3Y 3Y 3Y 5Y 6Y 7Y 7Y 9Y 10Y	Zero curve Interating Money Market R., Money Market R., Money Market R., Money Market R., Swap Rate	Instruments 	rm Coupon Requiri 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	V Calendar Copenhag				
€ .e3-2019 .e2-2019 .e2-2019 .e3-2019	Compositions	+/==	С изтичент ID ЕИКСАВНТО ЕИКСАВНТИ ЕИССАВНТИ ЕИССАВНТОВНТНИТИ ЕИССАВНТИ ЕИССАВНТИ ЕИССАВНТИ ЕИССАВНТ	Name PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE	Maturity 1D 1W 1M 1M 2M 2M 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y 2Y	Zero curve interest type Worny Mantet R., Worny Mantet R., Worny Mantet R., Worny Mantet R., Swap Rate Swap Rate Swap Rate Swap Rate Swap Rate Swap Rate Swap Rate	Instruments Calendar convent. Imm 1 Act_380 Act_380	119 Coppo Reguin 0 0 0 0 0 0 0 0 0 0 0 0 0	Y Ceendar 1 Copenhag 2 Copenhag 1 Copenhag 2 Copenhag 1 Copenhag 1 Copenhag 2 Copenhag				
c of date 02-2019 02-2019 02-2019 01-2019	Compositions	+/==	Instrument, ID EURCASHTM EURCASHTM EURCASHTM EURCASHTM EURCASHTM EURCASHTM EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY EURSWAPPY	Name PRCINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE PRICINGCUIVE	Maturity 1D 1W 6M 1Y 2Y 2Y 2Y 2Y 5Y 5Y 6Y 6Y 7Y 8Y 9Y 10Y	Zero curve Interest type Money Market R., Money Market R., Money Market R., Money Market R., Swap Rate Swap Rate	Instruments Cerestic convert. Imm t Act_300 Act_30 Ac	rm Coupon Requiri 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Y Cerendar Copenhag			Cont	

When calculating a pricing curve, PORTMAN uses the latest set of market rates linked to the zero curve relative to the calculation date. Thus, it is only necessary to link market interest rates to a zero curve when there are changes in the composition of the interest rates included in the curve.



When adding a new composition, the user is presented with a date in which the composition is valid from, and which market rates that are linked to the composition:

ero curve ID BasicCurve_EUR s of date 15-01-2019 v					
	Zero	curve instru	ments	+ 🗉 =	
Instrument ID	Name	Maturity 🔺	Interest type	Imm term	
EURCASH1D	PRICINGCUR	1D	MoneyMark		
	PRICINGCUR		MoneyMark		
EURCASH1M	PRICINGCUR		MoneyMark		
EURCASH6M	PRICINGCUR		MoneyMark		
EURSWAP1Y	PRICINGCUR		SwapRate		
EURSWAP2Y	PRICINGCUR		SwapRate		
EURSWAP3Y	PRICINGCUR		SwapRate		
EURSWAP4Y	PRICINGCUR		SwapRate		
EURSWAP5Y	PRICINGCUR		SwapRate		
EURSWAP6Y	PRICINGCUR		SwapRate		
EURSWAP7Y			SwapRate		
EURSWAP8Y	PRICINGCUR		SwapRate		
EURSWAP9Y	PRICINGCUR		SwapRate		
FLIDSWAD10V	PRICINGCUR	10Y	SwapRate		

3.3. Pricing curve

With the underlying data in place, it remains only to link them to a pricing curve. This is done under the context bar 'pricing curve'. Basic data consists of, among other things, an ID, description, currency, default markings, the attached zero curve and spread curves. For spread curves, the user has the option to specify whether the spread curve should be added or subtracted to the zero curve. The default markings apply per currency, and therefore a Default forward curve per currency and a Default discounting curve per currency can be specified. The same pricing curve may well be the default for both.

	Pricing curve - Edit	
Pricing curve ID	PRICURV_EUR	
Description	PRICINGCURVE MoneyMarketEUR MedSpread	
Currency code	EUR 👻	
Zero curve	BasicCurve_EUR	•
Default forward curve	Default discounting curve	
	Spread curves 🛛 🕂 📋 🗏	≡
Spread curve ID	Spread curves +	≣
Spread curve ID DiscSpread1	Spread curves + 1 =	≡
Spread curve ID DiscSpread1 ForwSpread	Spread curves + 🖬 🗏 Calculation method Add Sub	=
Spread curve ID DiscSpread1 ForwSpread	Spread curves + 1 = Calculation method Add Sub	

3.4. Daily Maintenance

Once the Pricing Curves and the underlying data are registered, the daily maintenance simply consists of ensuring updated values for spread and zero curves:

- If zero curve source: Supplied Add interest rates for each of the curves
- If zero curve source: Bootstrap / market rate
- Add interest rate in PORTMAN's rate register for each market rate linked to the curve
 If spread curves are used

Update values for spreads to the extent they have changed.

4. Calculations

Once all the data are registered for a pricing curve, it can be calculated and linked to instruments in PORTMAN. Note that PORTMAN calculates Pricing Curves *on the fly*. Thus, there is no pre-calculation in batch. Thus, a change in the underlying data will immediately make an impact on a pricing curve without invalidating it.

The calculation flow for generating a pricing curve (Source: Bootstrap / market rate calculated):

- Calculate the associated spread curves
- Calculate maturities for market rates
- If there are spread curves to be added / subtracted before bootstrapping, market interest rates are corrected with interpolated spreads
- Interest rate curves is bootstrapped at adjusted interest rates
- If there are spread curves to add / subtract after bootstrapping, interest rates are corrected with interpolated spreads
- The pricing curve is now ready!

The calculation flow for generating a pricing curve (Source: Externally supplied):

- Calculate the associated spread curves
- Calculate maturities of interest rates that are delivered
- If there are spread curves to be added / subtracted from the interest rates, the interest rates are corrected with interpolated spreads
- The pricing curve is now ready!

5. Application and documentation

Before using a pricing curve, you can advantageously check it under Pricing Curves - Pricing Curves. Here you will be able to see a graphical illustration of the curve and the underlying data. If the checkbox is set to Show zero and spread curves, the individual components (spread curves, zero curve, pricing curve) are shown as independent lines. By hovering over the graph, the underlying data values are displayed. Furthermore, it is possible to change the 'as of date' for which the Pricing Curves are shown.



Detailed *calculation documentation* is displayed by selecting the 'Show calculation documentation' button.

VITec	Calculation documentation
SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURSWAF	11 Swapforen T, Kouportengency E, 100007, Motelfale: 0108075 Synaplicitier: 0102095 Swapforen TC, Couportengency T, 100007 Motelfale: 0108115 Synaplicitier: 010215 Synaplicet: 10-010907 Motelfale: 010315 Synaplicet: 010215 Synaplicet: 10-010907 Motelfale: 010315 Synaplicet: 010215 Synaplicet: 0102
SecurityId='EURSWAF SecurityId='EURSWAF SecurityId='EURCASH SecurityId='EURCASH SecurityId='EURCASH SecurityId='EURCASH	99", Sangharen 27, CouponFrequency 100000", Markeffake- 2007393", SpreadBebrer- 2003219", Sanghates (10-40106127) (200000)", 10:00001-10:-0101617 100", Sangharen 27, CouponFrequency 100000", Markeffake- 200735", SpreadBebrer- 200335", SpreadBeter 10:-010157, 20070000, 10:00001-10:-0100942 101: Maturiy/date: 2200-97-34", Markeffake- 200713", SpreadBebrer- 200335", SpreadBebrer- 200337", Sanghates (10-4010577), 2000000", 10:00000-10:-0100942 101: Maturiy/date: 2200-97-34", Markeffake- 200507", SpreadBebrer- 200335", SpreadBebrer- 200335", SpreadBebrer- 200397",
Swap Bootstrap: MaturityDate='2021-0	77-23' SwanRate=10.010611'
DiscFactor=(1.0-0.0	10611*0.000000)/(1.0+0.010611)=0.989500
ZeroRate=(1.0/0.98	9500~(1.0/1)-1.0=0.010611
DiscEactor=(10-00)	J/-23/ Swapkate= UU10990 Infonne Rosson/J1 (Lu. Infonsom – 0.078057
ZeroRate=(1.0/0.97)	10050 0.3005200(1)0000 10000(0) 100574(1,02)-1,0=0,010691
MaturityDate='2023-0	07-23', SwapRate='0.010403'
DiscFactor=(1.0-0.0	10403*1.968457)/(1.0+0.010403)=0.969436
ZeroKate=(1.0/0.96)	1436°(1.0/3)-1.0=0.010401 17.22° Surgester=10.08223°
DiscFactor=(1.0-0.0	//25/ waprate 000022
ZeroRate=(1.0/0.96)	7849^(1.0/4)-1.0=0.008203
MaturityDate='2025-0	07-23', SwapRate='0.010388'
DiscFactor=(1.0-0.0	1038873.905742)/(1.0+0.010388)=0.949563
MaturityDate='2026-0	2-03 (10-05-10-0010464)
DiscFactor=(1.0-0.0	10464*4.855305)/(1.0+0.010464)=0.939366
ZeroRate=(1.0/0.93	9366^(1.0/6)-1.0=0.010479
MaturityDate='2027-0	1/-23' SwapKate= 0.00908/ Denor2*5 70/47 0.0 Dnoh071_0 020914
ZeroRate=(1.0/0.93)	8814^(1,0/7)-1,0=0.009061
MaturityDate='2028-0	07-23', \$wapRate='0.010318'
DiscFactor=(1.0-0.0	1031876,733495/y(1.0+0.010318)=0.921020
ZeroKate=(1.0/0.92 MaturityDate='2020.0	10/20*(1.0/8)-1.0=0.010337 77.23`SwanaBata='10101612'
DiscFactor=(1.0-0.0	//2.3, 3mgprate_001012 106127.654506/(1.0+0.010612)=0.909122
ZeroRate=(1.0/0.90	9122^(1.0/9)-1.0=0.010642
MaturityDate='2030-0	07-237 SwapRate=10010578'
ZeroRate = (1.0-0.0	10276782.030268/(1.14+0.010769)=0.899694 9894/11.01.01.10-0110F64
Resulting Pricing Curve	Points
MaturityDate:2020-07	-24, ZeroRate=0.009942, SpreadAfter[MaturityDate]=0.000000, PricingRate[MaturityDate]=0.009942
MaturityDate:2020-07	-30, ZeroRate=0.008574, SpreadAtter[MatuntyDate]=0.000000, PricingRate[MatuntyDate]=0.008574 7.4. ZeroRate=0.006872, SecondAtter[MatuntyDate]=0.000800, PricingRate[MatuntyDate]=0.008574
MaturityDate:2021-01	rce, zeroare=uxxxxxxx, spreadxiter(MaturityDate]=0.000000 PricingPate(MaturityDate]=0.008896
MaturityDate:2021-07	-23, ZeroRate=0.010611, SpreadAfter[MaturityDate]=0.000000, PricingRate[MaturityDate]=0.010611
MaturityDate:2022-07	-23, ZeroRate=0.010691, SpreadAfter[MaturityDate]=0.000000, PricingRate[MaturityDate]=0.010691
MaturityDate:2023-07 MaturityDate:2024-07	7-23, ZeroRate=0.010401, SpreadAfter(MaturityDate]=0.000000, PricingRate[MaturityDate]=0.010401 7-23, ZeroRate=0.018202, SenandAfter(MaturityDate]=0.000000, PricingRate[MaturityDate]=0.018202
MaturityDate:2024-07	-23, ZeroRate=0.010404, SpreadAtter(MaturiyUseL=0.00000, FricingRate(MaturiyUseL=0.000404
MaturityDate:2026-07	-23, ZeroRate=0.010479, SpreadAfter(MaturityDate]=0.000000, PricingRate[MaturityDate]=0.010479
MaturityDate:2027-07	F23_ZeroRate=0.099061_SpreadAfter[MaturityDate]=0.000000, PricingRate[MaturityDate]=0.009061
MaturityDate:2028-07 MaturityDate:2029-07	-23.2eroNate=0.010437, SpreadAtter(MaturdyUate)=0.00000, PricingRate(MaturdyUate)=0.010337 /-23.2eroRate=0.010642.SpreadAtter(MaturdyUate)=0.00000, PricingRate(MaturdyUate)=0.010642
MaturityDate:2030-07	-2, Zeronate = 001064, spreadAtter[MaturityDate]=0.00000, Pricingate[MaturityDate]=0.01064
	Ciose

6. Import

Basic Data regarding Pricing Curves can be imported with PORTMAN's XML import. Import help can be found directly in the schema file located at .. \ PORTMAN \ PM \ import \ xsd \ marketdata_curves.xsd or in PORTMAN's online help.