23.01.2020

# **PORTMAN Liquidity**

## How to get started

Vitec Aloc/HB Version 1.0 This document is based on the underlying system PORTMAN 7.24

**VITec** 

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# 1. Background

The main purpose of the Liquidity module is to serve the purpose of assisting in different processes where liquidity is involved to give you as the customer an overview over balances, cash flows in accounts and currency exposure. This is to help avoid both overdrafts and inexpedient excess liquidity.

The module is designed in a flexible user interface which – by the use of "drag & drop-functionality".

This means that you it is possible to create personalized views that fits the need of information needed with regard to period of time, currency, asset type etc.

The module works best if using "bonds with cash flow" as opposed to "bonds".

With this module it is possible to explore the details of the securities (ISIN/security ID) and transaction types (coupons, dividends etc.) that generate the cash flows.

In the following sections it will be described how to get started using the Liquidity module.

# 2. Overview

The Liqudity module is found by opening the menu in the lower left hand corner of PORTMAN.



This opens the Menu of the modules that are not already found in the left hand side of the user interface.



Once clicked the module will be found in the menu on the left side of PORTMAN until the module or PORTMAN is closed.



## 2.1. Liquidity calculation

In the left side of the module the fields for the calculation parameters are shown: If already filled when entering the module a calculation will start with the chosen parameters.

Liquidity	Liquidity data		
<b></b> @			
Calculatio	on parameters		
Calculation period from			
TD # 0		D	
to			
TY 😻 1		D	•
Portfolios			-
Client ID			
Search clients		q	
Portfolio ID			
Search portfolios		q	a
Pseudo portfolios			•
Aggregated portfolio	s		•
Extended parameters			-
			_

On the next pages there will be a brief explanation of the different paramters.

#### 2.1.1. Calculation period

The calculation period is a defined period of time for which the cash flows will be shown. The calculation can be up to a maximum of 50 years.

There are a few different ways to choose the period. As standard defined period is from TD+0 to TY+1 which means Today + 0 days and Today of this year + 1 year. So exactly from today and one year ahead.

For both "from" and "to" these options are available:

D 🐐 0	D 🕶
D - Today	hereitered
BM - Begin of this month	D -
M - Today of this month	
M - End of this month	
3Q - Begin of this quater	
Q - End of this quater	
3Y - Begin of this year	٩
Y - Today of this year	
Y - End of this year	٩
Pseudo portfolios	~
Aggregated portfolios	
Extended parameters	

It is possible to press the cross to change it to a minus and if it's easier to type a specific date it is also possible to press the "D" date selector to change it to Macro date selection.

01-01-2019	м -
5	
rd 😑 30	D 🗸
Portfolios	
Client ID	
0000001001	٩
Portfolio ID	
0000001001-001	٩
Pseudo portfolios	
Aggregated portfolios	
Extended parameters	

The point of using the TD/TY etc. is that if the same period of time is used for the calculation there is no need to change it from day to day, as the information is already typed in and a calculation will start once entering the module.

#### 2.1.2. Selecting a basis for the data

Data can be calculated for the three different types of portfolios known from PORTMAN; A single portfolio, a pseudo portfolio or an aggregated portfolio.

To choose a single portfolio either press the lupe or start typing a client/portfolio ID.

If a client ID is entered, only the portfolios for this client will be shown when searching for the portfolio ID as shown here:

lient ID		
0000001001		٩
Portfolio ID		
		<u>a</u>
Portfolio ID	Portfolio name	Portfolio no
8 BC	BBC	<b>B</b> BC
0000001001-001	Pensionsopsparing	001
0000001001-002	Privatopsparing	002
0000001001-003	Højrisiko	003

The same method is used to find a pseudo or an aggregated portfolio.

#### 2.1.3. Extended paramters

Once the calculation period and a portfolio is chosen the extended parameters can be set.

#### 2.1.3.1. Standard cash flow

The standard cash flow parameter can be set for:

- None
- Based On Bop Holdings And Transactions
- Based On Bop Holdings

**None** returns no cashflows. This can be relevant if only an additional cash flow is wanted. More about this in section 2.1.3.2.

**Based On B O P Holdings And Transactions** returns cash flows for both instruments in which there are a position on the from date and unsettled transactions.

**Based On B O P Holdings** returns only cash flows for instruments in which there are a position on the from date.

#### Example

This example will illustrate the difference between using **Based on B O P Holdings And Transactions** and using **Based on B O P Holdings**.

A position in a bond is bought 01-09-2019. There are coupons 01-10-2019 and 01-01-2020.

With the following paramters:

Calculation parameters	5
alculation period from	
20-08-2019	M -
01-03-2020	M -
Portfolios	
Client ID	
000001001	٩
Portfolio ID	
0000001001-003	۹
Pseudo portfolios	
Aggregated portfolios	
Extended parameters	
Standard cashflow	
Based On B O P Holdings	•
Additional cashflows	
Account balances	
Security holdings	
Date type	
Value Date	

A date before the purchase and using Based On B O P Holdings, nothing is shown as there is no positions on the from date.

However if Based On B O P Holdings And Transactions is used with the same dates cash flow information appears:

The cash flow is divided into the different years included in the calculation period 2019 and 2020.

6 L L C		2020	2019		
Calculation period from		HøjrisikoKo	750	-102.272	
20-08-2019	M -				
to					
01-03-2020					
Portfolios					
Client ID					
0000001001					
Portfolio ID					
0000001001 003					

If one of the years are marked. Information about the cash flow will be shown at the bottom of the screen:

۰ 🗖					Liquidity	data (2019, Hø	jrisikoKonto)
Registration date	Value date	Amount client curr	Client currency	Asset type	Category	Client ID	Portfolio no
01-09-2019	03-09-2019	-103.022,00	DKK	Bond	Exact Amount	0000001001	003
01-10-2019	01-10-2019	750.00	DKK	Bond	Exact Amount	0000001001	003

The purchase price of the position and the coupon is categorized as an exact amount because they are both registered. In comparison the expected coupon amount on 01-01-2020 is marked as a forecasted amount:

* 🗖					Liquidity	data (2020, Hø	øjrisikoKonto)
Registration date	Value date	Amount client curr	Client currency	Asset type	Category -	Glient ID	Portfolio no
01-01-2020	01-01-2020	750,00	DKK	Bond	Forecasted Amount	000001001	003

#### 2.1.3.2. Additional cash flows

The term additional cashflows (or external cash flows) covers the opportunity to import one or more cash flows, that are not registered elsewhere in PORTMAN.

Additional cash flows will only be affect the liquidity module and nothing else in PORTMAN. It can be used to e.g. keep track of labor costs, rent, commitments etc.

Additional cashflows will only be a part of the calculation if it is checked under Extented paramters:



How to import additional cash flows will be described in section 6 of this document.

#### 2.1.3.3. Unspecified portfolios

Unspecified portfolios is a term that is bonded to additional cash flows and defines if additional cash flows will be a part of the calculation of they are not linked to a specific portfolio ID.

Standard cachflow	
Based On B O P Holdings And Tra	ansactions 👻
Additional cashflows	
Unspecified portfolios	

There will be more information on how this works in section 6.

#### 2.1.3.4. Account balances



Choose if the the balance of the accounts are be shown or not.

#### 2.1.3.5. Security holdings



Choose if security holdings are shown or not.

#### 2.1.3.6. Date type

Date type can be set to either Value Date or Trade Date:

Value Date	-
Value Date	
Trade Date	

The parameter defines if an unsettled transaction, an already registered transaction that has not yet passed the value date (effect on account), will be counted as a cash flow or a position (holding).

In a classical liquidity context, value date will be most relevant, as it is the available liquidity that is important.

From a risk point of view, trade date can also be relevant as the ownership of the assets are counted by trade date.

## 3. Liquidity data presentation

Once a liquidity calculation has been made the data is now available to be presented in some different ways – in the following a description of the two primary ways of showing the calculated data will be given.

### 3.1. Liquidity overview

The first presentations are located in the main window of the module where the calculation parameters are also entered. It consists of two sections which work together in showing the calculated data.



The top part is a pivot table whereas the lower part is either a chart or a more detailed pivot table displaying the data from a cell marked in the top pivot table.



#### Chart:

0M 0M	× ⊪ 😿   Legend   F
ом	
OM 2019 2020	

Pivot cell data:

* 🔳					Liquidit	y data (2019,	Holdings)					
Registration 🔺	Value date	Amount client	Client currency	Asset type	Category	Client ID	Portfolio no	Account ID	Security ID	Security name	Issuer name	Is additional ca
	31-10-2019	48.868,21		Bond	Security Holding	0000001001			CP_BEH00003	Testobligation	Issuer TEST 1	
31-10-2019	31-10-2019	138.387,47	DKK	Bond	Security Holding	0000001001	003		DK0002002476	9% UniKredit	Issuer TEST 2	
31-10-2019	31-10-2019	1.500,00	DKK	Share	Security Holding	0000001001	003		DK00100844X2	Lån & Spar Inv	Liquidity udste	

The data can grouped by different parameters and shown in different levels of detail which is controlled with the "Date interval" and "Group by".

	2019	2020	
▹ Holdinas	188.756		
HøjrisikoKonto		1.500	
Grand Total	188.756	1.500	

Date interval covers the level of detail and have the following possibilities:

- Date
- Month
- Quarter
- Year

By choosing "Date" the data will show which dates have a cash flow where as if "Month" is chosen it will show the aggregated cash flows for the listed months.

"Group by" covers the following:

#### 3.1.1. Account

Showing the cash flow grouped by each account included in the calculation. The information will also show the category of the cash flow e.g. "Forecasted Amount" or "Security Holding":

\$					Pivot
	31-10-2019	01-01-2020	01-04-2020	01-07-2020	01-10-2020
Holdings Total	188.756				
SecurityHolding	188.756				
<ul> <li>HøjrisikoKonto Total</li> </ul>		375	375	375	375
ForecastedAmount		375	375	375	375
Grand Total	188.756	375	375	375	375

#### 3.1.2. Asset

By choosing to group by asset there will first be grouped by asset type – then by account and finally by the SecurityID thus showing the cash flow for each SecurityID:

\$				Pi	vot
	31-10-2019	01-01-2020	01-04-2020	01-07-2020	01-10-2020
▶ Share	1.500				
✓ Bond Total	187.256	375	375	375	375
Holdings Total	187.256				
9% UniKredit	138.387				
Testobligation	48.868				
HøjrisikoKonto		375	375	375	375
Grand Total	188.756	375	375	375	375

\$		Pivot					
	31-10-2019	01-01-2020	01-04-2020	01-07-2020	01-10-2020		
DKK Total	225.146	375	375	375	375		
Holdings Total	225.146						
Share	1.500						
Bond	223.646						
<ul> <li>HøjrisikoKonto Total</li> </ul>		375	375	375	375		
Bond		375	375	375	375		
USD Total	1.178	3.738	3.738	3.738	3.738		
Holdings Total	1.178						
Bond	1.178						
TestkontoUSD Total		3.738	3.738	3.738	3.738		
Bond		3.738	3.738	3.738	3.738		
and Total	226.325	4.113	4.113	4.113	4.113		

#### 3.1.3. Issuer

This presentation gives an overview of the cash flows grouped by each issuer:

	31-10-2019	01-01-2020	01-04-2020	01-07-2020	01-10-2020
	1.178	3.738	3.738	3.738	3.738
▲ Issuer TEST 1 Total	48.868	375	375	375	375
Holdings Total	48.868				
Bond	48.868				
<ul> <li>HøjrisikoKonto Total</li> </ul>		375	375	375	375
Bond		375	375	375	375
Issuer TEST 2 Total	174.778				
Holdings Total	174.778				
Bond	174.778				
Liquidity udsteder	1.500				
Grand Total	226.325	4.113	4.113	4.113	4.113

#### 3.1.4. More customization/sorting

The liquidity module has like the rest of the PORTMAN GUI, the option to personalize the shown data by using the filters/columns that gives the most value for you.

By clicking the gear-icon and choosing "Show headers" it is easy to see which information is shown in the pivot table.

4	Show headers			2020	
111	Show pivot field list	Ctrl+D	1.500		
T	Show nivot filter	Ctrl+F	1.500		
		Curri	467,442	16.453	
•	Print	Ctrl+P	467.442		
	Export			1.500	
	TestkontoUSD			14.953	
) Ca	ish		1.750.000		
Grand	Total		2.218.942	16.453	

Amount client currency	Value date 🔺	
A S	2019	2020
A Share Total	1.500	
Holdings	1.500	
Bond Total	467.442	16.453
Holdings	467.442	
HøjrisikoKonto		1.500
TestkontoUSD		14.953
Cash	1.750.000	
irand Total	2,218,942	16,453

By clicking the gear-icon in either the Pivot-table, the Pivot cell data-table or in "Liquidity data" it is possible to add or remove filters/columns.

For columns without a checkbox the columns are simply dragged into the desired location in the pivot table. For those with a checkbox – just check it and the column are now added. Columns can always be removed by reversing the process. If re-arranging of the columns are needed, just click a column and drag it to the desired location.

	31-10-2019	01-01-2020	01-04-2020	01-07-2020	01-10-2020			
Share Total	1.500	01-01-2020		01 2020	01 10 2020	AVITEC	PivotGrid Field List	×
Holdings	1.500							
Bond Total	187.256	375	375	375	375	Account currency		
Holdings	187.256					Account ID		
HøjrisikoKonto		375	375	375	375	Amount account currence	y	
rand Total	188.756	375	375	375	375	Amount security currenc	у	
						Category		
						Counterparty ID		
						Counterparty name		
						Issuer ID		
						Issuer name		
						Portfolio ID		
Chart Pivot	cell data			Liquidity dat	a (31-10-2019, Hø	ýrisikoKonto)		
Chart Pivot	c <b>ell data</b> ate Amount cli	ent Client currer	icy Asset type	Liquidity dat Category	a (31-10-2019, Hø	ijrisikoKonto) Partfalio na ≜account ID ∥VITeC	Security ID Securit Column Chooser	v name Issuer name X
Chart Pivot	tee Amount cli	ent Client currer	ncy Asset type	Liquidity dat Category	a (31-10-2019, Hø	ijrisikoKonto) Partfalia ao Account ID 4 VITEC Search Columns	Security ID Securit Column Chooser	v name issuer name X
Chart Pivot	ste Amount cli	ent Client currer	ncy Asset type	Liquidity dat Category	a (31-10-2019, Hø	ijrisikoKonto) Portfalia en Account ID VITEC Search Columns V Registration date	Security ID Securit Column Chooser	v name Issuer name X
Chart Pivot	cell data	ent Client currer	ncy Asset type	Liquidity dat Category	a (31-10-2019, Hø	jirisikoKonto) Partfalia na Account ID VITEC Search Columns Registration date V laue date	Security ID Securit Column Chooser	v name tsuer name X
Chart Pivot	s <b>cell data</b>	ent Client currer	ncy Asset type	Liquidity dat	a (31-10-2019, Hø	jirisikoKonto) Partfalia en Account ID VITEC Search Columns V Registration date Value date V Amount client currency	Security ID Securit Column Chooser	v name issuer name X
Chart Pivot	s cell data	ent   Client currer	ncy Asset type	Liquidity dat Category	а (31-10-2019, Нø   Client ID	jirisikoKonto) Portfolio na Account ID VITEC Search Columns V Registration date Value date Amount client currency Client currency	Security ID Securit Column Chooser	x name Issuer name X
Chart Pivot	s <b>cell data</b>	ent   Client currer	ncy Asset type	Liquidity dat	a (31-10-2019, Hø Client ID	jirisikoKonto) Portfolio no Account ID VITEC Search Columns V Registration date Value date Value date Value date Value date Value date Asset type	Security ID Securit Column Chooser	y name issuer name ×
Chart Pivot Registration A Value da	s cell data	ent   Client currer	ng Asset type	Liquidity dat Category	a (31-10-2019, Hø Client ID	ijrisikoKonto) Portfolio no Account ID VITEC Search Columns V Registration date Value date Amount client currency Client currency Client currency Client currency Client currency Client currency Client currency	Security ID Securit Column Chooser	v name issuer name ×
Chart Pivot	te Amount cli	ent Client currer	ny Asset type	Liquidity dat	a (31-10-2019, Hø	jrisikoKonto) Partfalia na Account ID	Security ID Securit Column Chooser	v name issuer name X
Chart Pivot	tell data	ent Client currer	ncy Asset type	Liquidity dat	a (31-10-2019, Hø	jrisikoKonto) Partfalia na Account ID ✓ VITEC Search Columns ✓ Registration date ✓ Value date ✓ Amount client currency ✓ Client currency ✓ Category ✓ Category ✓ Cient ID ✓ Partfulia na	Security ID Securit Column Chooser	v name Issuer name X
Chart Pivot	scell data	ent Client currer	ncy Asset type	Liquidity dat	ra (31-10-2019, Hø	jirisikoKonto) Portfolio no VITEC Search Columns V Registration date V Value date V Anount client currency Client currency Client ID Portfolio no Portfolio no Portfolio no	Security ID Securit Column Chooser	v name Issuer name X

In the Chart it is possible to choose between different types of charts:

- Bar chart
- Stacked bar chart
- Line chart

It is also possible to turn legends on/off and to have the chart showing data only for the selected cell or for the whole calculation.

It is controlled by the icons on the right hand side of the "Chart"-card:



In addition to the above mentioned ways of customizing the information by adding or removing columns it is also possible to filter the calculated data to show only the exact information needed.

The filters are also found under the gear icon:

2	Hide headers			
-	Show pivot field list	Ctrl+D	ite 🔺	
T	Show pivot filter	Ctrl+F		2020
-	Drint	Ctrl+D	1.500	
~	rinit	Cultr	1.500	
	Export		467.442	16.453
	TestkontoUSD			14.953
	HøjrisikoKonto			1.500
	Holdings		467.442	
► Ca	ash		1.750.000	
Grand	l Total		2.218.942	16.453

Here it is possible to add different filters e.g. only showing cash flows which value dates are in a certain period of time:

ØVITEC	PivotGrid Prefilter	×
And + Value date Is between 2019	2020 😸	
	OK Cancel Apply	

The following filters are available:

And +	
Valu	e date Equals <enter a="" value=""></enter>
	Value date
	Amount security currency
	Amount account currency
	Security currency
	lssuer name
	Asset type
	Security name
	Account name
	Category
	Security ID
	Trans code
	Registration date
	Portfolio no
2	Portfolio name
	Portfolio ID
	Counterparty ID
	Counterparty name
	Issuer ID

If you wish to a customized layout/showing of data it is possible by saving a "view". It is done like anywhere else in PORTMAN by clicking the "eye"-icon and then saving the view.



In this menu it is also possible to manage different views, if the different views in the liquidity module serves different purposes.

# 4. Liquidity raw data

As opposed to the grouped data decribed above, it is also possible to have the raw data shown in a grid by choosing the marked "Liquidity data".

			Calcula	ition period ( 01-11-2019 - 0	1-11-2020 ), Client ID:	0000001001, Portfolio ID:	0000001001-003				0
• •					Liquidity d	ata					
Registration date	<ul> <li>Value date</li> </ul>	Amount client currency	Asset type	Category		Portfolio no		Security ID	Security name	Issuer name	Is additional cash flow
					0000001001				Testobligation		
									Testobligation		
									Testobligation		
									Nordea LIQUIDITYberegn	Liquidity udsteder	

As default the columns listed above is shown. However as described earlier there are plenty of options for customizing the view. The following colums are available:

Dimension	Description
Value date	Value date of the transaction. This is the date from which the payment affects the account
Registration date	Date when the payment was agreed and the amount determined. This could be the date when a share was traded or when a dividend was paid. It will typically take a few days for the payment to affect the associated account
Amount security currency	Payment denominated in instrument currency
Amount account currency	Payment denominated in account currency.
Amount client currency	Payment denominated in client currency
Asset type	PORTMAN asset type (e.g. Bond, Share, Cash etc.)
Category	PORTMAN payment type (e.g. Security holding, Account balance, Exact amount, Forecast amount etc.)
Security ID	Fund code for the instrument that the payment relates to. For account transactions and depository fees, this is the fund code used to register the transaction.
Security name	Name of fund code.
Security currency	Currency code for fund code
Account name	Name of account
Account currency	Currency code of the account
Account ID	The unique ID of the account
Client ID	Client associated with the payment
Client currency	Client currency code
Client description	Name of client
Portfolio name	Name of portfolio
Portfolio no	The portfolio number (e.g. 003)
ortfolio ID	The unique ID of the portfolio (e.g. 0000001001-003)
Trans code	PORTMAN transaction type
Is additional cash flow	Indicates if the cash flow is an additional cash flow
Counterparty ID	Counterparty associated with the instrument or transaction (if any)
Counterparty name	Counterparty name.
Issuer ID	Issuer associated with the instrument (if any)
Issuer name	Name of issuer

Selected columns are further described in the following sections:

#### 4.1.1. Category (payment type)

The payment type defines the type of numeric value of the payments ('Amount in security cur.', 'Amount in account cur.' or 'Amount in client cur.').

Payment types may be:

SecurityHolding	Market value incl. accrued interest on the instrument on the settlement date (today's date).
CollateralHolding	Market value incl. accrued interest on the collateral on the settlement date (today's date).
RepoHolding	Market value incl. accrued interest on repo on the settlement date (today's date).
AccountBalance	Account balance on the settlement date (today's date).
ExactAmount	Cash flows registered as transactions. For example, a future coupon may have payment type = 'Exact' if and only if it has been registered, but it will have payment type = 'Forecasted' if it has not been registered.
ForecastedAmount	Cash flows <u><b>not</b></u> registered as transactions. For example a future coupon may have payment type = 'Forecasted' if and only if it has <u><b>not</b></u> been registered.

Note that 'SecurityHolding' represents most PORTMAN asset types, such as bonds, shares, swaps and currency forwards, while repos and collaterals are labelled as 'RepoHolding' and 'CollateralHolding' respectively.

#### 4.1.2. Amount – security, account and client currency

These three columns hold the payments denominated in instrument, account and client currency.

Together with the 'Category' column (payment type), they define whether the amounts represent an account balance, a market value or a cash flow ('ExactAmount' and 'ForecastedAmount').

#### 4.1.3. Security, account and client currency

Currency codes show which currency the amounts are denominated in for 'Amount in security cur.', 'Amount in account cur.' and 'Amount in client cur.'.

For example, Amount in client currency = 100 and Client currency = EUR will together give an amount of EUR 100.

#### 4.1.4. AssetType

This column shows the PORTMAN asset type, e.g. Cash, Bond, Share, Swap etc.

Note that both account and cash collateral transactions have asset type Cash, while repo/reverse transactions have asset type Bond (corresponding to the underlying bond in the repo).

#### 4.1.5. Is additional cash flow

This column indicates whether a payment is an external payment. The values may be either TRUE or FALSE, where TRUE means that the payment is from an external cash flow and FALSE means that it is not.

#### 4.1.6. TransCode

The 'TransCode' indicates what sort of PORTMAN transactions the listed payments are for, e.g. interest and instalment payments on bonds, repo payments, dividends etc. Note that market values and balances on accounts are not PORTMAN transactions and are labelled 'Unknown'.

In other words. 'TransCode' gives a more detailed description of the cash flow type.

#### 4.1.7. Other columns

The other columns in the data set, such as 'Security ID', 'Security name', 'Issuer ID', 'Issuer name', 'Portfolio ID' etc., should be self-explanatory, and are not defined further in this document.

#### 4.1.8. Is additional cash flow

This column indicates whether a payment is an external payment. The values may be either TRUE or FALSE, where TRUE means that the payment is from an external cash flow and FALSE means that it is not.

#### 4.1.9. TransCode

The 'TransCode' indicates what sort of PORTMAN transactions the listed payments are for, e.g. interest and instalment payments on bonds, repo payments, dividends etc. Note that market values and balances on accounts are not PORTMAN transactions and are labelled 'Unknown'.

In other words. 'TransCode' gives a more detailed description of the cash flow type.

#### 4.1.10. Other columns

The other columns in the data set, such as 'Security ID', 'Security name', 'Issuer ID', 'Issuer name', 'Portfolio ID' etc., should be self-explanatory, and are not defined further in this document. funktion fra

# 5. Additional cashflows

Additional cash flows gives the possibility to import cash flows that are not linked to a PORTMAN instrument.

## 5.1. Manual registration

It is not yet possible register an additional cash flow manually from the user interface.

## 5.2. XML-import

External cash flows can be imported by XML-format. See example in appendix A.

## 5.3. Export of data

It is possible to export the data from the module with the following options:

- Export function in the module \*BILLEDE\*
- Copy using Ctrl+C (copies selected data)
- PORTMAN API

## 5.4. PORTMAN API

By using PORTMAN API it is possible to use the Liquidity module without opening PORTMAN.

The following requests are available:

- <u>GET</u>

api/{clientId}/portfolios/{portfoliold}/calculatedcashflows?BopDate={BopDate}&Eop Date={EopDate}&DateSelectionMethod={DateSelectionMethod}&StandardCashFlo wMethod={StandardCashFlowMethod}&IncludeAdditionalCashFlows={IncludeAddi tionalCashFlows}&IncludeSecurityHoldings={IncludeSecurityHoldings}&IncludeAcc ountBalances={IncludeAccountBalances}&IncludeUnspecifiedPortfolios={IncludeU nspecifiedPortfolios}

- <u>GET</u>

api/{clientId}/aggregatedportfolios/{aggregatedportfolioNo}/calculatedcashflows? BopDate={BopDate}&EopDate={EopDate}&DateSelectionMethod={DateSelectionM ethod}&StandardCashFlowMethod={StandardCashFlowMethod}&IncludeAdditional CashFlows={IncludeAdditionalCashFlows}&IncludeSecurityHoldings={IncludeSecur ityHoldings}&IncludeAccountBalances={IncludeAccountBalances}&IncludeUnspeci fiedPortfolios={IncludeUnspecifiedPortfolios}

- DELETE api/additionalcashflows/{cashFlowId}

- DELETE api/additionalcashflows
- PUT api/additionalcashflows/{cashFlowId}

The 2 GET-requests return data equivalent to Liquidity data (raw data) from the user interface. One request is used by choosing a client and a portfolio where the other is used by choosing an aggregated portfolio. The other parameters are shared and include:

- BopDate (from date)
- EopDate (to date)
- DateSelectionMethod
  - o Value date
  - o Trade date
- StandardCashFlowMethod
  - o None
  - Based On Bop Holdings And Transactions
  - Based On Bop Holdings
- IncludeAdditionalCashFlows (TRUE/FALSE)
- IncludeSecurityHoldings (TRUE/FALSE)
- IncludeAccountBalances (TRUE/FALSE)
- IncludeUnspecifiedPortfolios (TRUE/FALSE)

# 6. Appendix A

Below is an example of an import of an external cash flow classified as a sale (00-transaction).

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<import xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aloc.dk/pm/liquidity"
xsi:schemaLocation="http://www.aloc.dk/pm/liquidity_liquidity_additional_cashflow.xsd">
  <section id="PM_LIQUIDITY_ADDITIONAL_CASHFLOW_IMPORT"</pre>
method="AppendOrUpdate"> <!-- Replace, AppendOrUpdate, AppendOnly, UpdateOnly -->
   <entrv>
     <additionalcashflowentry>
       <additionalcashflowid>AddCFTest</additionalcashflowid>
       <valuedate>2017-06-15</valuedate>
       <registrationdate>2017-06-15</registrationdate>
       <expirydate>2017-09-14</expirydate>
       <transcode>00</transcode>
       <category>ExactAmount</category>
       <securityname>AddCFTest</securityname>
       <amountsecuritycurrency>900100</amountsecuritycurrency>
       <amountaccountcurrency>900100</amountaccountcurrency>
       <amountclientcurrency>900100</amountclientcurrency>
     </additionalcashflowentry>
   </entry>
  </section>
</import>
```