



FIS TREASURY AND RISK MANAGER - QUANTUM EDITION

INTEREST RATE RISK MANAGEMENT

Piotr Kiepuszewski, 08 March 2023



A leader in technology and services for merchants, banks and corporates across the globe.

\$87B
MARKET CAP.

450
SOLUTIONS

20K
CLIENTS

\$14B
REVENUE

\$10T
ANNUALLY GLOBAL MOVE

79B
GLOBAL TRANSACTIONS PROCESSED

62K
COLLEAGUES IN 52 COUNTRIES

198
OPERATIONAL FACILITIES WORLDWIDE



Serving **60%** of the
top 10 largest merchants

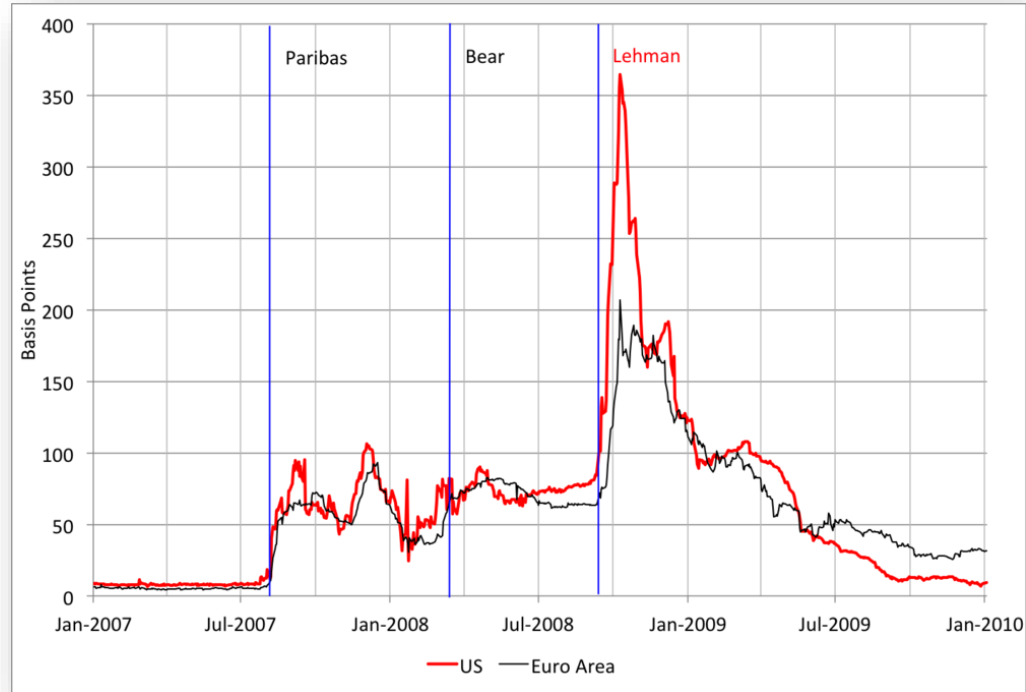


Serving **90%** of the
top 20 private equity firms

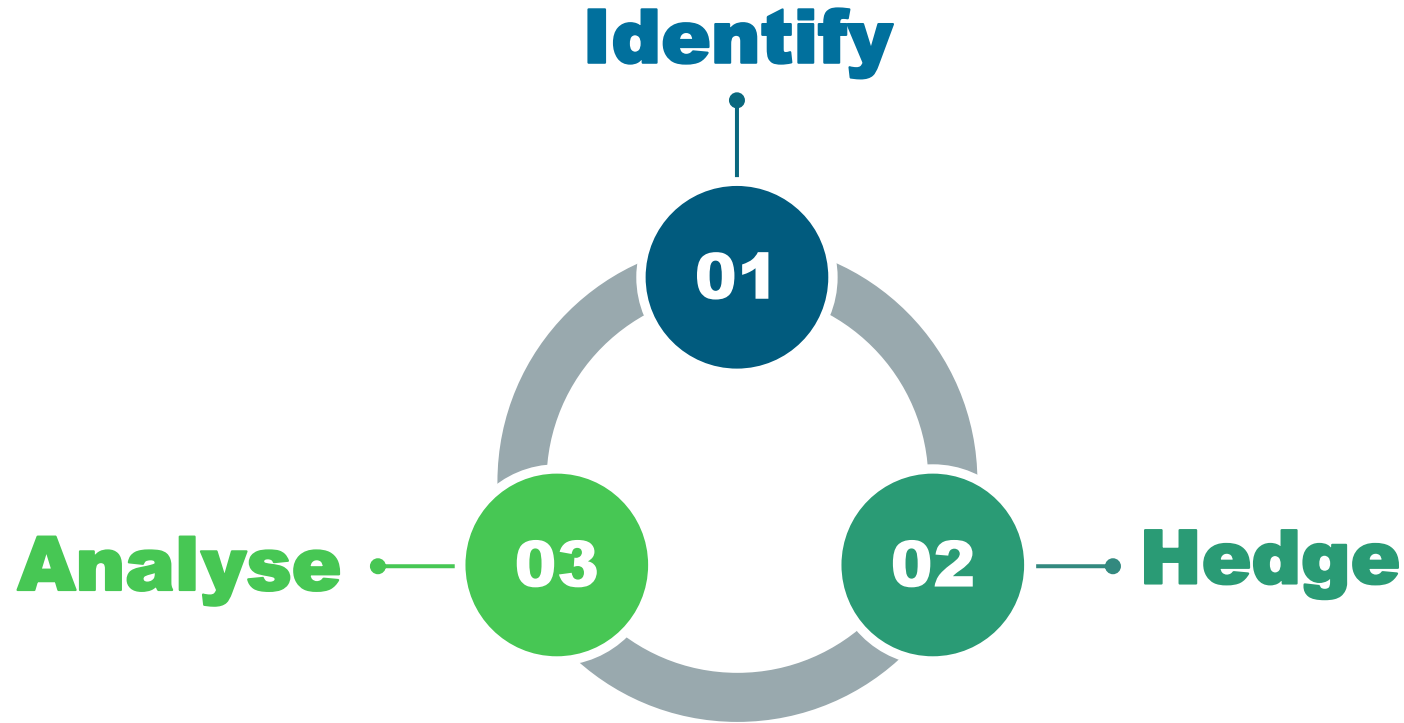


Serving **90%** of the
top 50 largest global banks

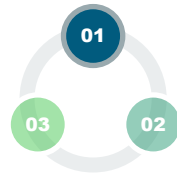
WHERE WERE YOU ON 15 SEPTEMBER 2008?



INTEREST RATE RISK MANAGEMENT



IR EXPOSURE IDENTIFICATION



Full Portfolio Analysis

All treasury transactions, incl. RFR benchmarks



IR Risk Measurement

Flexible and aligned to your needs



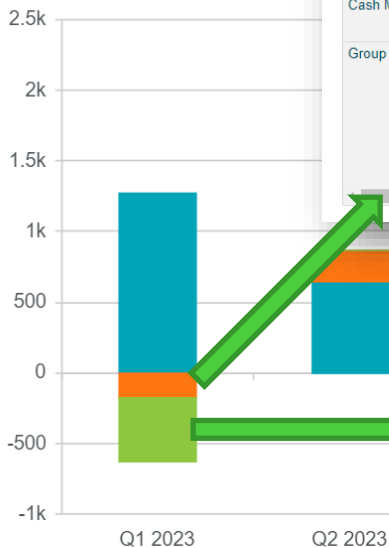
Live Dashboards

On demand view of IR exposures

FUNDING DECISIONS

Time-bucketed liquidity forecast, by source

VIEW
Working Capital Forecast



VIEW
ERP AP/AR cash flow - Configure

Projected Value			Date	19/12/2022	20/12/2022	30/12/2022	27/01/2023	30/01/2023	01/02/2023	02/02/2023	24/02/2023	28/02/2023	01/03/2023	02/03/2023	03/03/2023
Entity	Currency	Instrument	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
Cash Management	USD	CUSTOMER													
		SUPPLIER													
Group Treasury (UK01)	EUR	CUSTOMER													
		SUPPLIER													
	GBP	Bank Account Fee						60,000.00							
		CUSTOMER	298,000.00	240,000.00	6,000.00	90,000.00			600.00	168,000.00					
		Payroll													
		SUPPLIER													

ERP Source Data

View in Ledger Window

Deal Number	Ticket Number	UTI	Instrument	Deal Type
420			Deposit	Deal
Deal Details Other Details Deal Map Cash Flows G/L Entries Analysis Codes Quotes				
Company	Entity	Facility		
Subsidiary USA	Funding	NONE		
Borrow / Invest	Face Value	Formula Timing	<input type="checkbox"/> Apply Range Accrual	
INVESTMENT	EUR 50,000,000.00	YIELD PERIODIC		
Base Rate	Margin	Interest Rate		
4.50000000	1.00000000	5.50000000		

Available Liquidity Operational Forecast Treasury Forecast

IR EXPOSURE IDENTIFICATION

Fixed/Floating Portfolio Analysis and Policy Limits

CASH FLOW — QUERY **ANALYTICS**

Cashflow Gaps

483277 a minute ago Previous Runs... Configure

VIEW
by Repricing Date Configure

A A A 10 items

Time Profile End	Jan-23	Apr-23	Jul-23	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24
Fixed	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base
Currency	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base	Face Value Base
EUR	0	0	0	0	0	0	0	0

Cashflow Gaps — by Currency

3 items

Time Profile	Quarterly 1	Quarterly 2	Quarterly 3	Quarterly 4	Quarterly 5	Quarterly 6	Quarterly 7	Quarterly 8
Currency	BP Delta Base	BP Delta Base	BP Delta Base	BP Delta Base	BP Delta Base	BP Delta Base	BP Delta Base	BP Delta Base
EUR	1,304	251	315	524	59,826	4	10	183,370
GBP	-47	-1	36	-3	69	-4	101	50,250
USD	5,273		-3		-5		-8	-12,037
Grand Total	6,531	250	348	521	59,890	0	103	221,582

IR EXPOSURE IDENTIFICATION



Full Portfolio Analysis

Coverage of all treasury transactions



IR Risk Measurement

Flexible and aligned to your needs



Live Dashboards

On demand view of IR exposures

IR EXPOSURE HEDGING



Hedging Policy Implementation

Recognition of hedging thresholds



Hedging Proposals

Suggested hedging transactions



Hedge Accounting

Various HR types, with hedge automation

IR EXPOSURE HEDGING

Pre-hedge transaction checks

Deal Number

Deal Identifier

Instrument

Deal Type

IRS Floating-Fixed

Actual

Check Limit

Last Run Time

03 Mar 2023 14:24:21

Limits

1 items

Search

Query	Limit Currency	Limit	Deal Utilization	Utilization	Available Before Deal	Available After Deal	Matching Criteria
Counterparty Limits	EUR	200,000,000.00	8,483,742.18	21,671,907.96	178,328,092.04	169,844,349.86	Counterparty: BNP Paribas

Close

03-Mar-2023

2

Margin

-1,013,369.18

0.896326

-0.000001

-17.854114

0.005578

0.005536

05-Jun-2023

96

Interest

488,017.04

-12,803.409894

0.673506

5.400569

263.366246

262.355799

05-Jun-2023

96

Margin

-1,688,379.40

45.066069

-0.002357

-18.684204

0.267947

0.266919

04-Sep-2023

187

Interest

345,492.26

-12,837.744495

1.987092

3.823340

372.804756

371.578348

04-Sep-2023

187

Margin

-1,689,525.90

87.902218

-0.009051

-18.696891

0.521995

0.520277

IR EXPOSURE HEDGING

Hedging policy and hedge proposals

VIEW
by Fixed/Floating - in Thousands ▾ Configure

Time Profile End		Mar-23			Jun-23			Sep-23			Dec-23		
Currency	Fixed Floating	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %
EUR	Fixed	4,727.5	100.5	85.0	-5,424.2	99.5	85.0	-5,901.4	94.6	85.0	-5,378.1	93.1	85.0
	Floating	-24.4	-0.5	45.0				-338.3	5.4	45.0	-401.1	6.9	45.0
					IRS Hedge								

VIEW
by Fixed/Floating - in Thousands ▾ Configure

Time Profile End		Mar-23			Jun-23			Sep-23			Dec-23		
Currency	Fixed Floating	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %	Cashflow (Base)	Fix-to-Float %	Policy Limit %
EUR	Fixed	8,319.8	151.7	85.0	-1,668.6	55.8	85.0	-2,145.8	53.7	85.0	-1,663.3	43.6	85.0
	Floating	-2,835.5	-51.7	45.0	-1,324.1	-44.2	45.0	-1,632.0	-46.3	45.0	-2,112.2	-56.4	45.0

**500M EUR
1Y Float-Fix
IRS**

IR EXPOSURE HEDGING

Hedge Accounting and Automation

HEDGE RELATIONSHIP

Hedge Relationship 415

Deal Number

415

Deal Details

Documentation

Linked Deals

Events

Linked Deals

Deal Number	Hedge / Exposure	CCY Pair	CCY (Leg 1)	Deal
410	EXPOSURE	EUR/EUR	EUR	-50
414	HEDGE	EUR/EUR	EUR	-50
419	HYPOTHETICAL	EUR/EUR	EUR	-50

Prospective Test

Prospective Test Method
REGRESSION

Prospective Test Timing
POSITION DATES

Interval
1 MONTHS

Sample Style
ROLLING

Initial Sample Size
30

Minimum R-squared
0.8000

Slope Lower - Upper
-1.2500 -0.0800

Intercept Lower - Upper
-10,000 10,000

Slope Confidence Interval
95% (STUDENT'S t)

Slope T Statistic
95% (STUDENT'S t)

☒ Include intercept in effectiveness assessment

☒ Include slope confidence interval in effectiveness assessment

☐ Include slope t statistic in effectiveness assessment

2 items

Search

Prospective

R Squared	Slope	Slope Test Range	Slope OLS Range	Intercept	Intercept Test Range	Intercept OLS Range	T Statistic	TCritical	F Statistic	FCritical
1.0000	-109.0765	(-1.2500 to -0.0800)	(-109.0765 to -109.0765)		(-10,000 to 10,000)					
1.0000	-81.6277	(-1.2500 to -0.0800)	(-81.6277 to -81.6277)		(-10,000 to 10,000)					

Clean/Dirty

CLEAN

CLEAN

CLEAN

IR EXPOSURE HEDGING



Hedging Policy Application

Recognition of hedging thresholds



Hedging

Suggested hedging transactions



Hedge Accounting

Various HR types, with hedge automation



Advanced Hedging Policy Rules

Automated notification for policy breaches

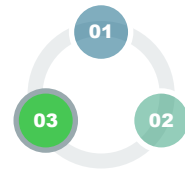
Automated dealing

Time saving and lower risk of manual errors

Better Financial Reporting

Sophisticated HA requirements met

POST-TRADE ANALYTICS



Will my hedge be effective tomorrow?

Changing market conditions



How will it perform when stressed?

Modeling black swans



How effective was my hedging policy?

Policy backtesting

POST-TRADE ANALYTICS

Scenario definition

Name

Yield Scenarios

Comments

Scenarios

New...

9 items

Search



Name

Method

Shift Rate

Rates

Flattening 50

Funnel +50

Funnel -50

Market

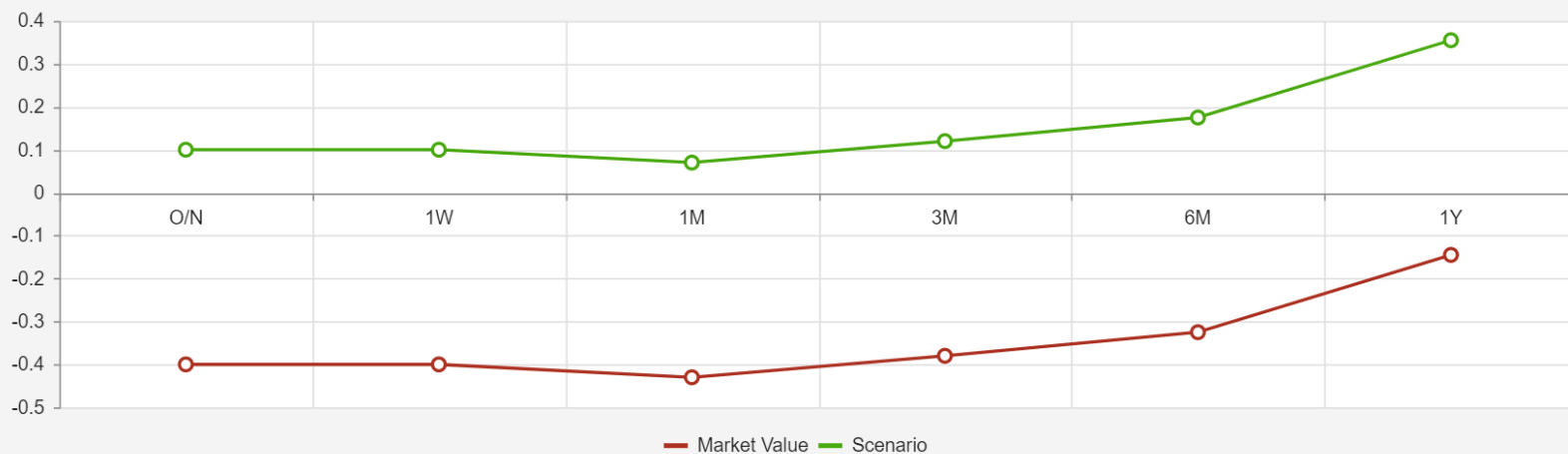
Parallel +50

Parallel -50

Rotation +50

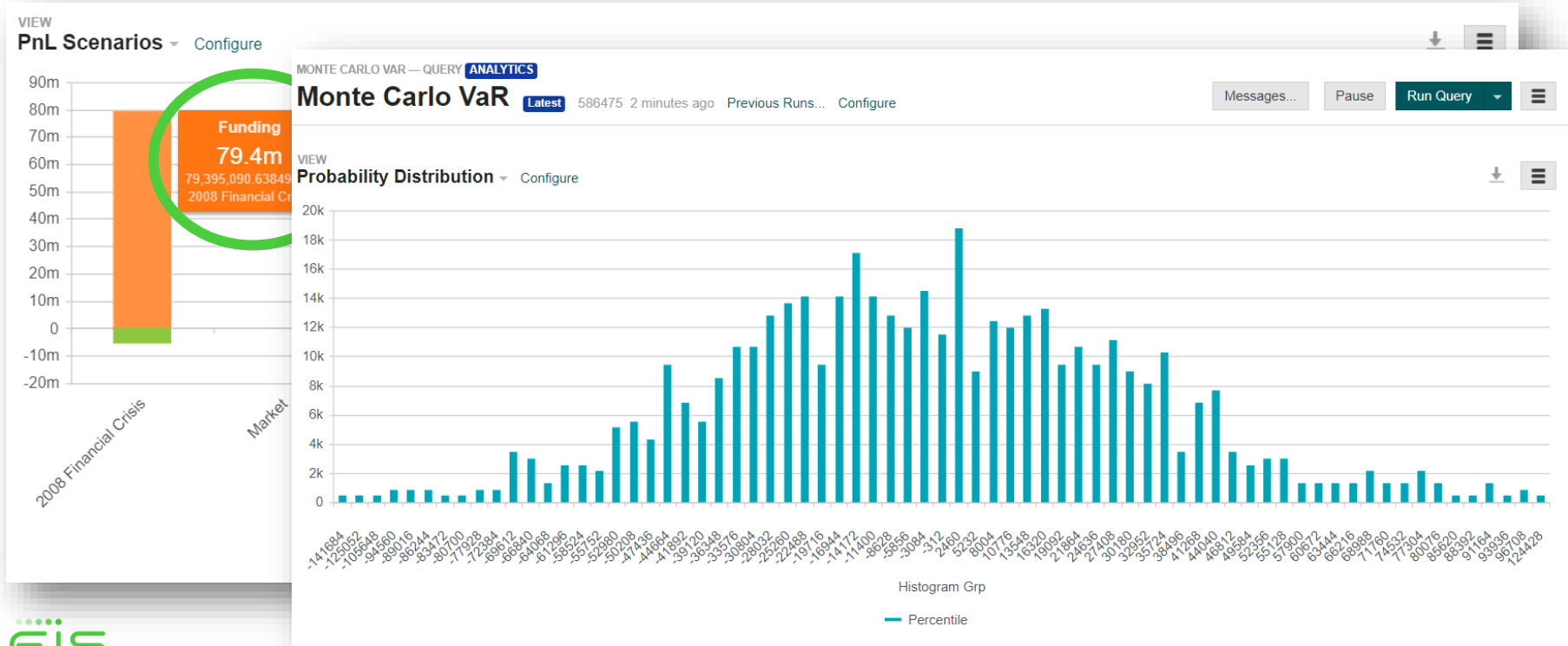
Rotation -50

Steepening 50

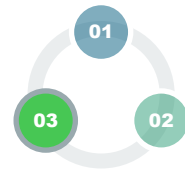


POST-TRADE ANALYTICS

Impact assessment



POST-TRADE ANALYTICS



Will my hedge be effective tomorrow?

Changing market conditions



How will it perform when stressed?

Modeling black swans



How effective was my hedging policy?

Policy backtesting

Configurable Scenario Analysis

User-friendly scenario definition

Value at Risk

Historical, Variance-Covariance, Monte Carlo

On-Demand Reporting Suite

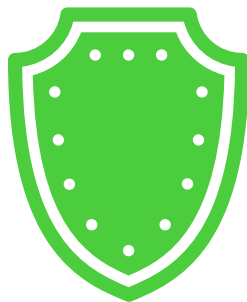
Based on historical data

FIS SOLUTIONS & IR RISK MANAGEMENT

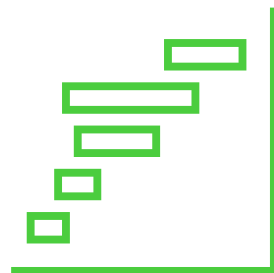
**IR EXPOSURES
IDENTIFICATION**



**IR EXPOSURES
HEDGING**



**POST-TRADE
ANALYTICS**



Q&A



IR HEDGING WORKFLOW

- Identifying IR risk exposures
- Validation of hedging policy
- Hedging decision
 - Hedge proposal
 - Trade capture
 - Post-trade analysis
- Portfolio stress test
- IR risk dashboard



YOUR OBJECTIVES

TREASURY AND INTEREST RATE RISK

“I want to have transparency around my IR risk exposures”

- ✓ IR analysis of all treasury transactions
- ✓ IR risk measurement aligned with your policy
- ✓ Flexible user-configurable reporting

“I want to make effective hedging decisions”

- ✓ Pre-hedge limits check
- ✓ Incorporation of hedging policy
- ✓ Hedging proposals / simulations

“I want to simulate market impact on my portfolio”

- ✓ Scenario analysis
- ✓ Liquidity impact assessment
- ✓ P/L impact assessment

FUNDING DECISIONS

Time-bucketed liquidity forecast, by source

VIEW
Period ▾ Configure

in EUR

Header		in EUR							
Type	DealType	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24
Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
Available Liquidity	Actual	1,276.4	647.8	860.7	1,045.7	1,245.2	1,478.1	1,669.2	1,926.7
Operational Forecast	Actual	-176.3	212.2	194.4	202.3	191.0	213.5	236.0	224.8
Treasury Forecast	Actual	-457.2	0.7	-9.4	-2.8	41.9	-0.3	-0.7	-3.1
Grand Total	Funding			1,045.7	1,245.2	1,478.1	1,691.3	1,904.6	2,148.3

500M EUR
1Y Fixed
Borrowing

Period ▾ Configure

in EUR

Header		in EUR							
Type	DealType	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24
Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
Available Liquidity	Actual	1,276.4	1,147.7	1,354.9	1,534.2	1,728.1	1,455.5	1,646.6	1,904.1
Operational Forecast	Actual		212.2	194.4	202.3		213.5	236.0	224.8
Treasury Forecast	Actual	42.7	-5.0	-15.1	-8.4	-463.6	-0.3	-0.7	-3.1
Grand Total		1,319.1	1,354.9	1,534.2	1,728.1	1,264.5	1,668.7	1,881.9	2,125.7