

Future developments in PEARL

Client conference | May 11, 2023

99.3554

108.365

122.3354

100.665

106.5548

Public



Future developments in PEARL

Introduction

- Recent releases
- Current Engineering projects
- Release plans 2024 and beyond
- Market developments
 - ESG
 - Attribution for private assets



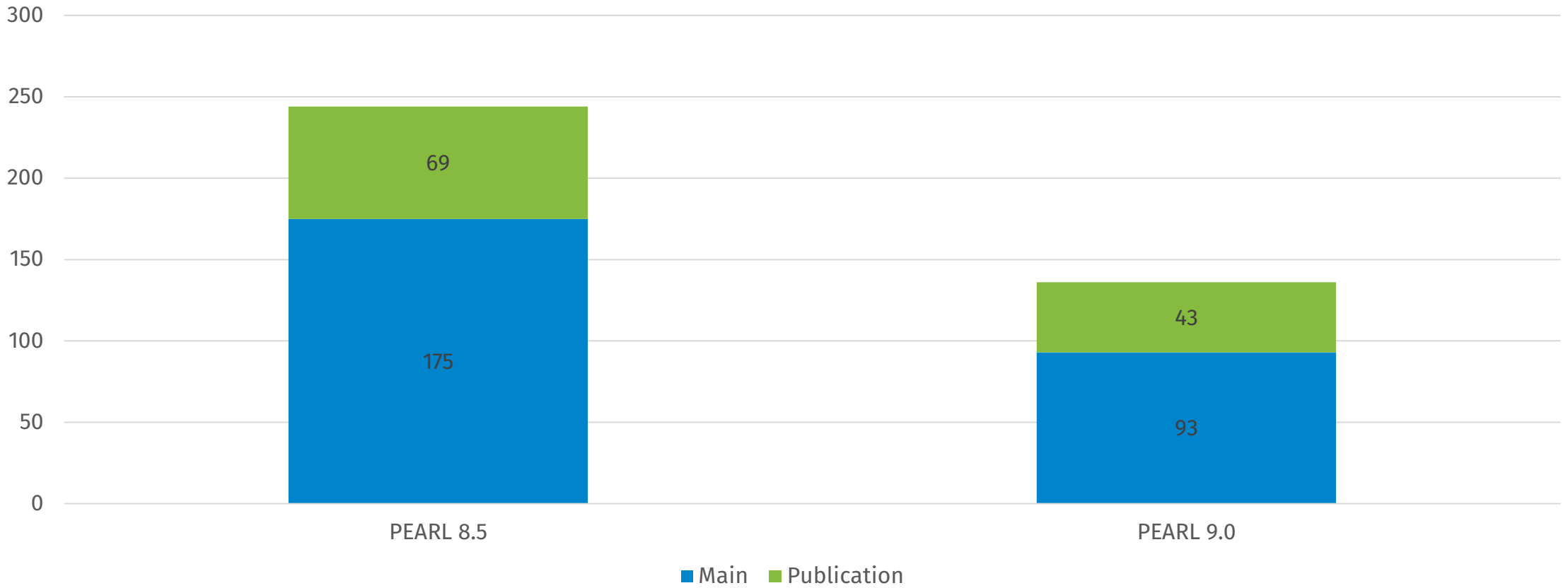
Recent releases

PEARL 9 released

- 2023 – Q1: PEARL 9 released
- Calculation improvements
 - Faster calculations
 - Reduce server resources
 - Operators in control over attribution output
- Modernize Reporting
 - Finish modernization of reporting, designer and dashboard sections
 - Improve user experience
 - Extend set of reporting APIs

Storage improvements

Database Sizing (GB, segment sizes)



Modernize reporting

PEARL Workflow **Reporting** Dashboard Favorites **Analysis** Data views GIPS Designer

PEARL30_MAIN

Fund
Fund F001 Asset Manager Balanced Fund ...

Analysis type
Decision

Report
DEC: Main

DEC: Main
Fund F001 Asset Manager Balanced Fund
Monetary values times 1.000.000
Currency: Base currency [EUR]

End date: Latest available date (2018-05-10)
Period: Select start date (2017-05-09)

Decisions Main

Description	Currency - Identifier	XS Result (Unhedged)	XS Return (Unhedged)	XS Contribution To Group (Unhedged)	XS Contribution To Top (Unhedged)	XS Resu
Asset Manager Balanced Fund	EUR	0,18	1,01%	0,00%		1,01%
Split fees from net results	EUR	0,00	-0,46%	0,00%		0,00%
Asset Class allocation	EUR	0,21	1,01%	1,01%		1,01%
Other Operational selections	EUR	-0,03	0,96%	-0,01%		-0,00%

XS Gains & Returns (Hedged)

Period	XS Result (Hedged) Single Period	XS Result (Hedged) Cumulative	XS Return (Hedged) Single Period	XS Return (Hedged) Cumulative
2017-05-09	-0,00	-0,00	-0,00%	-0,00%
2017-05-10	-0,25	-0,26	-1,16%	-1,16%
2017-05-11	0,00	-0,26	0,00%	-1,16%
2017-05-12	0,03	-0,23	0,12%	-1,04%
2017-05-13	-0,00	-0,23	-0,00%	-1,04%



Current Engineering projects

PEARL 9 released

- PEARL 9 feedback and extensions
 - Data migration
 - Position reports on attribution segments
 - Dynamic measure selections to Reports
 - Release end Q2, 2023
- Tech strategy and cloud native
 - Plan ready Q3, 2023
- On the fly attributions
 - PEARL 9.1 release expected Q4, 2023



Tech strategy and cloud native

Engineering research

- Ortec Finance Enterprise Tech Strategy - Provide technology to
 - Enable growth | Assure quality | Deliver fast
- Move our servers to the cloud
 - Possibilities for geographic independence
- Set up scalable architectures
 - Decouple storage from compute resources
- Use microservices and APIs
- Automation of deliveries and deployments



Tech strategy and cloud native

Engineering research

- How to change the application architecture
 - Web Portal
 - Job Scheduler
 - ETL Engine
 - Database
 - Run cost effective on Oracle cloud
- Calculation improvements further dependent on the technical choices



On the fly attribution

Highlights

- Calculate an attribution directly, outside the batch process
 - Output available directly, calculation within minutes
 - Output only temporarily stored
 - Output calculated based on the same data and the same methods as in batch output
 - Possible to promote an OTFA analysis to the formal batch process
- Benefits
 - Improved workflow by promoting OTFA attributions to batch process
 - Available for users outside the performance team

On the fly attribution

Possible attribution extension: carve outs

- Create an analysis after applying a filter

Security filter ⓘ

Country ▾ = Australia AU ▾ 🗑️ + Or

And

Sector1 ▾ = 10. Energy ▾ 🗑️ + Or

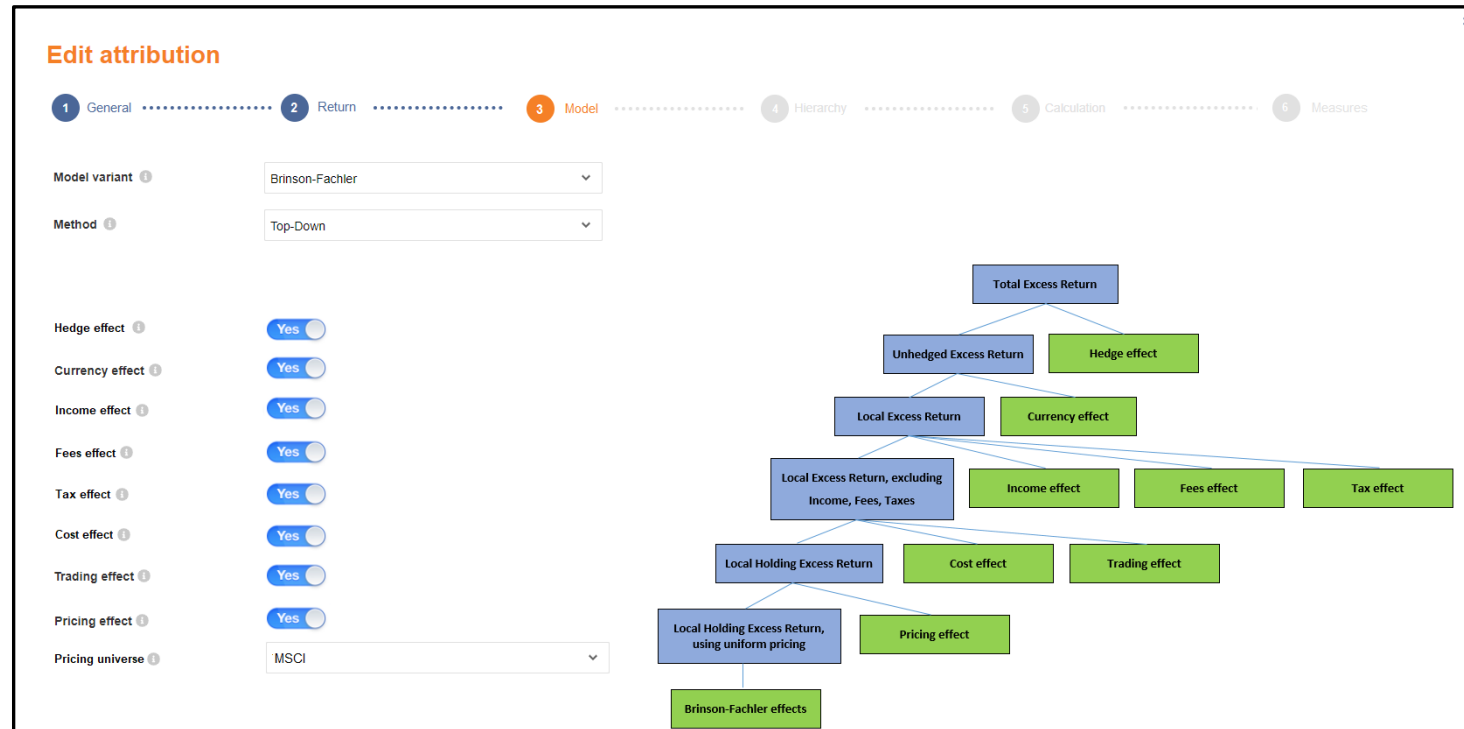
+ And

The return of the carve out is explained using the configured attribution

On the fly attribution

Possible attribution extension: return flexibility

- Specify one main return for the attribution calculations
- Main return has a greater set of possible components (Multiple types of fees)
- Easily include specific decompositions returns and effects





Developments 2024

- **Reporting improvements**
- Currency overlay & hedge policies
- Workflow improvements
- Partial batch processing
- New reporting entities
 - E.g. relevant yield curves
- New graph types
 - E.g. Waterfall graphs



Developments 2024

- Reporting improvements
- **Currency overlay & hedge policies**
- Workflow improvements
- Partial batch processing
- Combine output to one single entity
 - market / decision analysis reports
 - currency overlay analysis
- Improve investment dependent hedge configurations
- Improve interfacing of currency instruments



Developments 2024

- Reporting improvements
- Currency overlay & hedge policies
- **Workflow improvements**
- Partial batch processing
- Assign workflow tasks to other users, including review (four eyes principle)
- Sign off and distribute output data and reports
- Export and import configurations
- Template system for fund definitions



Developments 2024

- Reporting improvements
 - Currency overlay & hedge policies
 - Workflow improvements
 - **Partial batch processing**
- Flag one or more analysis which needs to be calculated next in a partial batch
 - A partial batch run only processes all data that is needed for the marked analysis.



Other product topics

- Ex-ante risk integration
- Portfolio analysis

- Further Calculation architecture improvements
- Replace ACM with Redhat SSO



ESG

Current status in the market

- Performance reporting/attribution
 - Typically Brinson but no consistency
 - Bucket by ESG score quantiles
 - Carbon emissions attribution
- ESG starting to be incorporated as a risk factor
 - Tricky to define what can represent the return of a risk factor
 - Argument for ESG itself being a factor
- Reporting responsibility
 - Which team? Performance/ESG/Risk/Other



Private markets

Areas of interest

- Late valuations
 - How does a late valuation impact attribution?
 - What is the impact to currency overlay reporting?
- Value bridge approach
 - Explain the change in market value by attributing to different growth factors