

## White Paper

### Fund Ratios and Exposures

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This white paper addresses the following openfunds fields:

OFRE000010 Number Of Positions  
OFRE000015 Number Of Target Fund Positions  
OFRE000020 Number Of Index Holdings  
OFRE000025 Share Of Top 10 Investments  
OFRE000030 Share Of Top 25 Investments  
OFRE000200 Exposure To Cash  
OFRE000250 Average Dividend Yield  
OFRE000300 Linear Average Credit Quality  
OFRE000305 Default Weighted Average Credit Quality  
OFRE000310 Instrument Credit Quality Methodology  
OFRE000320 Credit Rating Classification  
OFRE000330 Average Effective Maturity  
OFRE000335 Average Effective Duration  
OFRE000340 Option-adjusted Spread  
OFRE000345 Average Effective Spread Duration  
OFRE000350 Yield To Maturity  
OFRE000355 Yield To Worst  
OFRE000360 Average Coupon  
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OFRE100100 Fund Ratios And Exposures Data Type  
OFRE100105 Fund Ratios And Exposures Field Name  
OFRE100108 Fund Ratios And Exposures Value Type  
OFRE100109 Fund Ratios And Exposures Value Type ID  
OFRE100110 Fund Ratios And Exposures Value  
  
OFST020430 Annual Distribution At Fiscal Year End  
OFST020435 Annual Distribution Yield At Fiscal Year End

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The most common fund ratios, such as Dividend Yield or Yield to Maturity, and the underlying investment exposures are crucial characteristics when evaluating, selecting, and comparing fund solutions. These fields have been added to the openfunds standard and the goal of this white paper is to provide more details on the data points.

The delivery of fund ratios and exposures in the openfunds standard targets the following improvements:

- a) Increasing efficiency in fund data dissemination.
- b) Aligning the delivery of data between various asset managers and fund distributors.
- c) Simplifying the further processing of fund data.
- d) Increasing data consistency with fund factsheets, data templates such as Tripartite Template (TPT) and other publications.
- e) Contributing to the standardization of the fund data universe.

The aim of having fund ratios and exposures in the openfunds standard is to provide a data template for key fund figures that aligns individual files already exchanged between asset managers and distributors. On the one hand it should simplify the data gathering for fund distributors and analysts, and on the other it should reduce the effort of the asset managers and administrators to produce one single set of reusable data. Asset managers should deliver publicly available figures that are also published / delivered via other data sources. This ensures data consistency across publications and providers are able to use existing figures in the openfunds template.

While the openfunds standard largely relies on the calculation methodologies used by asset managers, this white paper offers further details on the fund ratio and exposure openfunds fields and connects them to existing market standards and definitions.

## Overview of Fund Ratios and Exposures

		Fund Classification (reference to EFAMA Main EFC Category / OFST350100)		
		Equity	Bond	Money Market
		<b>Flat or narrow table fields</b>		
Fund Ratios and Exposures	Key Figures	Number of Positions Number of Target Fund Positions Number of Index Holdings (passive funds) Share of Top 10 Investments Share of Top 25 Investments		
	Distributions	Annual Distribution at Fiscal Year End Annual Distribution Yield at Fiscal Year End		
	Ratios	Exposure to Cash  Average Dividend Yield	Linear Average Credit Quality Default W. Average Credit Quality Instrument Credit Quality Methodology Credit Rating Classification Average Effective Maturity Average Effective Duration Option-adjusted Spread Average Effective Spread Duration Yield to Maturity Yield to Worst Average Coupon Exposure Loss-Absorbing Securities	Weighted Average Maturity Weighted Average Life
		<b>Narrow table only fields</b>		
	Breakdowns	Top Ten Positions Country Breakdown Currency Breakdown Before Share Class Hedging		
		Equity Sector Breakdown Market Cap Breakdown	Bond Sector Breakdown Credit Rating Breakdown Maturity Breakdown	

Key figures and ratios on Multi-Asset and Absolute Return Innovative Strategies (ARIS) funds (in the sense of the EFAMA<sup>1</sup> categories) are generally not the focus of the first version of this specification; however, similar definitions could be applied where applicable (e.g. the country breakdown is applicable to real estate funds).

The incorporation of Multi-Asset funds, including the Asset Class Breakdown, is scheduled for one of the upcoming openfunds releases of the fund ratios and exposures.

<sup>1</sup> <https://www.fundconnect.com/Solutions/Assets/EFC%20Categories%20Report.pdf>

## General Remarks

Two main references are used as a basis for the definition of the fund ratio and exposure fields:

The Solvency II regulation contributed a standard for holdings attributes by publishing the Tripartite Template (TPT), which can be leveraged to calculate some of the openfunds fields (<https://www.findatex.eu/mediaitem/f5aaa2ea-1d71-4c7c-b316-b2074ef7f13d/Solvency%20II%20TPT.xlsx>).

The Open Protocol standard has been developed to provide a more elaborate template for hedge funds. The standard is available on SBAI's webpage (<https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

### Calculation Methodology

Generally, asset managers are responsible for the calculation methodology reflecting the fund characteristics correctly. This paper provides further guidance on the (potential) calculation methodology of the published data points with reference to other external sources such as regulatory specifications.

Given the fact that the figures and calculations might be based on the individual guidelines of asset managers, the underlying calculation methodologies for particular data fields may slightly deviate.

Ratios and exposures that are calculated on fund level will be based on the underlying fund portfolio in reference currency (excluding instruments used for share class hedging).

If not specified in the description, the data points will reflect the effective economic net exposure of the fund (option- / delta-adjusted). Regarding the calculation of exposures for derivatives, please use the Open Protocol definitions in section GP15 of the Open Protocol Manual (<https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

If the classification of an underlying instrument is missing (e.g. maturity date / rating of a bond), the asset manager should decide on an appropriate handling. In most cases, the instrument would be ignored for the ratio calculation (exclusion) and be mapped to "Other" for the exposure aggregation. However, if the instrument has a material weight, the asset manager may decide on a different approach.

If a data point is not relevant due to the nature of the fund strategy (e.g. Yield to Worst in case of a traditional government bond fund without right to redeem the bonds before maturity), the field can be left empty (NULL).

In case of Fund of Funds (FoF) structures, some attributes are based on the fund holdings without look-through to underlying funds (e.g. Number Of Target Fund Positions), while some will be calculated using a look-through (e.g. Country Exposure). Further details can be found in the field descriptions.

In case of synthetically replicating index trackers/ETFs, the fund ratios and exposures will reflect the underlying index, and not the substitute basket.

## **Data delivery**

As an industry standard, the figures are based on month-end valuations that is specified per fund / share class and delivered on a monthly basis. For money market funds, some figures are required on a weekly basis for regulatory reasons<sup>2</sup>. The fields highlighting the effective distributions of distributing share classes (Annual Distribution At Fiscal Year End / Annual Distribution Yield) may be delivered on an annual basis, based on the Fiscal Year of the fund. These fields are part of the OFST field range and may be delivered separately from the rest of the fields. The field **Fund Ratios And Exposures Valuation Date** specifies the date of the valuations.

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<sup>2</sup> REGULATION (EU) 2017/1131 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2017 on money market funds

## Key Figures

The field **Number Of Positions** provides clarity on the diversification of the fund. It is applicable to funds investing a) purely in direct investments or b) direct investments and collective investments. The field reflects the count of underlying positions in the fund (identical to number of positions in the Custodian Report), including derivatives. If the portfolio includes direct investments and collective investments, the number should not be delivered on a look-through basis. In exceptional cases such as physically replicating index trackers, the asset manager should deliver the number on a look-through basis. Cash-related positions (such as bank accounts and FX forwards) should be excluded from the count.

The field **Number Of Target Fund Positions** reflects the count of the underlying funds (not on a look-through basis). This field is also applicable to funds investing in direct investments and collective investments.

The field **Number Of Index Holdings** is only applicable to index trackers (ETFs and Index Funds / physical and synthetic) and shows the count of holdings in the underlying benchmark.

The fields **Share Of Top 10 Investments** and **Share Of Top 25 Investments** reflect the share (in %) of the largest positions held by the fund based on the gross market exposure. The ratios give an indication of the fund's concentration risk. This should be calculated as the gross market exposure of Top 10/25 investments (excluding cash) divided by fund's total net assets.

The number of positions as well as the share of top investments will be provided on Fund Level. Share Class-specific positions (e.g. due to currency hedging) are excluded.

## Distributions

The fields related to the effective distributions of the share class will provide further details on the effective share class distributions (i.e. effective cash flow before deduction of local withholding tax on the distribution). These two fields are part of the OFST field range, rather than OFRE as with the other fields in this white paper.

Since the effective distribution is usually defined at the fund's fiscal year end, this field may be delivered on an annual basis, depending on the distribution policy.

The effective distribution of net income gives further clarity on the expected cash flow (payment) generated by the share class. Since:

- the asset manager may deduct the management fee from the distributions
- the dividend payments of underlying stocks are subject to withholding tax
- there are other effects that potentially reduce the effective distributions

the effective distributions may deviate substantially from:

- a) the weighted dividend yield of the underlying stocks (example distributing equity funds) or
- b) the coupon yield of the underlying bonds (example distributing bond funds).

The distributions correspond to the Income Distribution shown in Morningstar and the Income reported by Bloomberg (DVD <GO> / Gross Amount). The distributions should correspond to the figures sent to the tax authorities.

The field **Annual Distribution At Fiscal Year End** (absolute / share class currency) measures the effective cash distribution of net income (before taxes) for the fiscal year (12 months) per fund share. This data is valid as at the date of the static data field *OFST010440 Fiscal Year End*.

The field **Annual Distribution Yield At Fiscal Year End** (relative) provides an indication on the effective distribution yield in % (before taxes) for the fiscal year (12 months). The distribution yield is calculated by dividing the Annual Distribution At Fiscal Year End (absolute / share Class currency) by the NAV at Fiscal Year End. This data is valid as at the date of the static data field *OFST010440 Fiscal Year End*.

Indicative example:

Distribution as of	<b>28.02.2020</b> (Fiscal Year End)	Reported (Fund Ratios And Exposures Valuation Date)
Annual Net Income in USD	<b>45.900</b>	Reported (Annual Distribution at Fiscal Year End)
Tax Retention (Switzerland)	16.065	
Distribution to Unitholders after Tax	29.835	Not reported
NAV in USD as at 28.02.2020	<b>1311.428</b>	
Annual Distribution Yield	<b>3.500%</b>	Reported (Annual Distribution Yield)



## Fund Ratios

### Treatment of non-applicable instrument types

The exposure to cash and other investment types that are not applicable to the related average ratio should be excluded from the calculations of the key fund ratios (except field Exposure To Cash).

Example **Linear Average Credit Quality** of a bond fund:

Credit Quality	Fund Exposure
AA	45%
A+	45%
Cash	8%
Other	2%

Tranches applicable for the calculation of the Average Credit Quality (Linear): 45% in AA and 45% in A+

Resulting Average Credit Quality (Linear): **AA-** (only considering the applicable investments, 50% in AA and 50% in A+)

### Cash Ratio

The field **Exposure To Cash** highlights the fund exposure to liquidity as a percentage. Cash represents the net cash exposure on liquidity accounts based on the fund's P&L. The field corresponds to the CIC field 71 "Cash" (Notes and coins in circulation that are commonly used to make payments). Calculations such as Basel III HQLA (High Quality Liquid Assets) are not required. Cash amounts on Subscription and Redemption accounts will not be included.

### Equity Fund Ratios

The field **Average Dividend Yield** is applicable to equity funds and measures the weighted Dividend Yield of the equity investments held by the fund (excluding non-dividend paying instruments such as Cash). Aligned to the traditional methodology, the dividend yield of a single stock is calculated by dividing the effective dividends paid over the last 12 months by the last stock price.

## Bond Fund Ratings and Ratios

### Ratings

In the openfunds standard, the following credit rating format is used:

	BBB+	CCC+	D
AAA	BBB	CCC	Not Rated
	BBB-	CCC-	
AA+	BB+	CC+	
AA	BB	CC	
AA-	BB-	CC-	
A+	B+	C+	
A	B	C	
A-	B-	C-	

### Overall rating of the fund portfolio

The calculation of the average credit rating of the fund from the ratings of the fund holdings should take the considerations of Deng, McCann and O’Neal<sup>3</sup> into account. In particular, non-rated bonds should not result in overstating the average credit rating of the fund and the difference between linear and weighted credit rating should reflect the exponential increase of the default probability of lower rated instruments.

The field **Linear Average Credit Quality** represents the linear average rating of the bonds held by the fund. The field **Default Weighted Average Credit Quality** reflects the fact that the default probability is not linear. The asset manager needs to select the appropriate calculation methodology including default rates for the rating buckets. There are different default rates available over various periods, e.g. Moody’s Idealized Cumulative Default Probabilities over 10 years or default rates defined by Morningstar (“New Methodology for Average Credit Quality” 2010).

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<sup>3</sup> <https://www.slcg.com/pdf/workingpapers/Average%20Credit%20Quality%20in%20Bond%20Portfolios.pdf>  
Published in *Journal of Investing*, Vol. 19, No. 4, pp. 58-65, 2010

## Rating of each instrument

There are various standards for deriving instrument ratings from different rating agencies available in the market. The mappings of the ratings from different agencies are publicly available (e.g. [mapping of ECAIs' credit assessments under Article 136\(1\) and \(3\) of Regulation \(EU\) No 575/2013](#) / Open Protocol Manual <https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

The asset manager needs to decide which of the following methods is appropriate for the fund holdings. Method 1 is recommended to ensure consistency with the Solvency II TPT template.

### Method 1: Solvency II - 2<sup>nd</sup> best rating<sup>4</sup>

#### Method 2: Average Rating

Use of the average of various ratings. If the average does not correspond to one of the available categories (e.g. average between AA / AA- / A), the worse rating should be used ("adjust downward").

#### Method 3: Most Frequently Used

Use of the most frequently used rating. If there are inconsistent ratings (e.g. AA / A+ / A), the worst rating should be used.

#### Method 4: Worst Rating

Use of the worst rating.

The methodology that is used should be indicated in the field **Instrument Credit Quality Methodology**. In case that an FI instrument does not have an instrument rating, the long-term issuer rating can be used for senior loans and should be adjusted by 1-2 notches in case of non-senior / subordinated debt.

## Accredited and non-accredited rating agencies

The field **Credit Rating Classification** is used to specify whether the credit ratings of the underlying bond investments have been assigned by accredited or non-accredited rating agencies. The registered and certified credit rating agencies in accordance with Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit rating agencies (the Credit Rating Agencies Regulation) is available on the webpage of ESMA (<https://www.esma.europa.eu/supervision/credit-rating-agencies/risk>).

In case of non-accredited rating agencies, we distinguish between Third-party ratings (e.g. Swiss bonds are rated by Swiss banks) and internal ratings (e.g. by the Asset Manager). Accordingly, this field has the values Accredited rating agencies / Third-party ratings / Accredited and third-party ratings / Internal ratings / Mixed ratings – mixed ratings should be

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<sup>4</sup> See Official Journal of the European Union / Legislation / L12 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2015:012:FULL&from=EN>): Article 4 (e/f): "Where two credit assessments are available from nominated ECAIs and they correspond to different parameters for a rated item, the assessment generating the higher capital requirement shall be used; where more than two credit assessments are available from nominated ECAIs for a rated item, the two assessments generating the two lowest capital requirements shall be used. If the two lowest capital requirements are different, the assessment generating the higher capital requirement of those two credit assessments shall be used. If the two lowest capital requirements are the same, the assessment generating that capital requirement shall be used."

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selected if the sources of the different instrument ratings in the fund portfolio are from all three main rating sources (accredited, third-party and internal).

## Bond Fund Ratios

The different bond ratios are applicable to traditional bond funds investing in bonds (including convertibles) with a fixed maturity / call date. In case of callable bonds, the first call date should be used for the calculation.

The field **Average Effective Maturity** estimates the effective maturity (net / option-adjusted) of the fund, considering the expected call date of callable bonds. The definition available on “Investopedia” can be used as a reference (<https://www.investopedia.com/terms/a/average-effective-maturity.asp>).

The field **Average Effective Duration** measures the interest rate sensitivity (net / option-adjusted) of the fund. The Morningstar definition (as per 30.04.2018) can be used as a reference: “A holding weighted average of effective duration, a measure of duration that accounts for embedded options, which measures the percentage change in value of the portfolio for a change in interest rates or yield, expressed as a ratio.” If the bonds do not include embedded options, the modified duration can be used. The CFI (Corporate Finance Institute®) provides further details on its webpage (<https://corporatefinanceinstitute.com/resources/knowledge/finance/duration/>).

The field **Option-adjusted Spread** is applicable to traditional bond funds and measures the difference between the average interest rates of underlying bond portfolio and related risk-free rates (appropriate for market and currency, e.g. US Treasury bonds or LIBOR money market/related replacement). The definition available on “Investopedia” can be used as a reference (<https://www.investopedia.com/terms/c/creditspread.asp>).

The field **Average Effective Spread Duration** highlights the sensitivity of the underlying corporate bond portfolio to changes in credit spreads (net / option-adjusted). For example, floating rate notes may have a marginal effective duration but a very meaningful spread duration.

The field **Yield to Maturity** highlights the YTM before taking into account cost such as currency hedging or management fee. The definitions of Morningstar<sup>5</sup> and Open Protocol<sup>6</sup> provide a reference.

The field **Yield to Worst** is calculated as the lowest of yields to all call dates, to put dates, or the yield to maturity. Effective YTW before taking into account cost such as currency hedging or management fee. The definition of Open Protocol can be used as a reference<sup>7</sup>.

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<sup>5</sup> Morningstar 20.5.2010: “The Yield to maturity (YTM) or redemption yield of a bond or other fixed-interest security, such as gilts, is the internal rate of return (IRR, overall interest rate) earned by an investor who buys the bond today at the market price, assuming that the bond will be held until maturity, and that all coupon and principal payments will be made on schedule. Yield to maturity is actually an estimation of future return, as the rate at which coupon payments can be reinvested when received is unknown.”

<sup>6</sup> Open Protocol (Manual): “The weighted average of YTM in the portfolio, where YTM is expressed as the interest rate that will make the present value of the cash flows - both coupon payments and final maturity value - equal to the bond market price, if the bond is held to maturity.” Further details can be found in the manual of Open Protocol (<https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

<sup>7</sup> “The weighted average of yields in the portfolio under the assumption that any callable bonds within the portfolio are called at the earliest possible opportunity.” Further details can be found in the manual of Open Protocol (<https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

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The field **Average Coupon** is applicable to traditional bond funds and measures the weighted coupon of the bond investments held by the fund (excluding non-coupon paying instruments such as Cash).

The field **Exposure Loss-Absorbing Securities** is applicable to bond funds and measures the allocation that is subject to any technical loss-absorption triggers or write downs (like AT1 CoCos). Further details can be found in the Basel III requirements for total loss-absorbing capacity (TLAC).

## Money Market Fund Ratios

The fields **Weighted Average Maturity WAM** and **Weighted Average Life WAL** are applicable to money market funds. Detailed definitions are available from the regulators<sup>8</sup>.

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<sup>8</sup> WAM: Definition CESR's Guidelines on a common definition of European money market funds, as per 19 May 2010: "WAM is a measure of the average length of time to maturity of all of the underlying securities in the fund weighted to reflect the relative holdings in each instrument, assuming that the maturity of a floating rate instrument is the time remaining until the next interest rate reset to the money market rate, rather than the time remaining before the principal value of the security must be repaid. In practice, WAM is used to measure the sensitivity of a money market fund to changing money market interest rates." Definition REGULATION (EU) 2017/1131 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2017 on money market funds: "WAM is used to measure the sensitivity of an MMF to changing money market interest rates. When determining the WAM, managers of MMFs should take into account the impact of financial derivative instruments, deposits, repurchase agreements and reverse repurchase agreements and reflect their effect on the interest rate risk of the MMF. When an MMF enters into a swap transaction in order to gain exposure to a fixed rate instrument instead of a floating rate, that fact should be taken into account for determining the WAM."

WAL: Definition CESR's Guidelines on a common definition of European money market funds, as per 19 May 2010: "WAL is the weighted average of the remaining life (maturity) of each security held in a fund, meaning the time until the principal is repaid in full (disregarding interest and not discounting). Contrary to what is done in the calculation of the WAM, the calculation of the WAL for floating rate securities and structured financial instruments does not permit the use of interest rate reset dates and instead only uses a security's stated final maturity. WAL is used to measure the credit risk, as the longer the reimbursement of principal is postponed, the higher is the credit risk. WAL is also used to limit the liquidity risk." Definition REGULATION (EU) 2017/1131 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2017 on money market funds: "WAL is used to measure the credit risk of an MMF's portfolio: the longer the reimbursement of the principal is postponed, the higher the credit risk. WAL is also used to limit the liquidity risk of an MMF's portfolio. In contrast to the calculation of the WAM, the calculation of the WAL for floating rate securities and structured financial instruments does not permit the use of interest rate reset dates and instead only uses a financial instrument's stated final maturity. The maturity used for calculating the WAL is the residual maturity until legal redemption, since that is the only date on which the management company can reasonably expect that the instrument will have been reimbursed. Due to the particular nature of the underlying assets for some securitisations and ABCPs, in the case of amortising instruments, the WAL should be able to be based on the maturity calculation for amortising instruments either on the contractual amortisation profile of such instruments or the amortisation profile of the underlying assets from which the cash-flows for the redemption of such instruments result."

## Breakdowns

The breakdowns provide details on the effective net exposure (delta-adjusted) of the fund/share class. Look-through should be applied for fund of funds structures. If the fund follows a long only strategy and does not use options/derivatives, the sum of the categories will add up to 100% (except field Top Ten Positions). The category “Cash” can be used for Cash/Cash Equivalents (corresponds to the field “Exposure to Cash”) and “Other” for instruments that are not applicable.

The list of the **Top Ten Positions** describes the 10 biggest single positions within the fund and their weight within the portfolio, sorted in descending order. In order to identify the holding, the name and the ISIN of each position should be provided (if available). The look-through of the portfolio should only be applied in case of index funds and ETFs, i.e. no look-through for actively managed funds investing in single securities as well as pure fund of funds. Cash-related positions (such as bank accounts and FX forwards) should be excluded. In case of synthetically replicating ETFs, the top ten index positions should be used.

The field **Country Breakdown** describes the single country exposure of the fund. To ensure that the figures represent the effective exposure, the country of company headquarters/head office should be used (issuer country in case of bond funds). The two-letter ISO codes are used as country identifier. Corresponds to the “Solvency II Tripartite Template TPT Version 4.0, field 52\_Issuer\_country”.

The field **Currency Breakdown Before Share Class Hedging** describes the breakdown of the risk currencies held by the fund before share class hedging (e.g. NAV). Active currency views implemented via derivatives (on fund level) should be considered. The three-letter ISO codes are used as currency identifier (including XXX for “no currency” and XAU/XAG etc. for gold and other materials). The related exposures are also derivable from TPT (Solvency II Tripartite Template).

To get further clarity on the currency exposure after share class hedging, please refer to the static fields Share Class Currency (OFST020540) and Share Class NAV Hedge (OFST020262). The white paper “Hedging” provides detailed insights on the hedging methodologies.



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The field **Equity Sector Breakdown** is applicable to equity funds and highlights the effective sector exposure of the fund (delta-adjusted). In the openfunds standard, the following sectors are used:

<b>openfunds value ID</b>	<b>openfunds value name</b>
COMM	Communication Services
COND	Consumer Discretionary
CONS	Consumer Staples
ENER	Energy
FINA	Financials
HLTC	Health Care
INDS	Industrials
TECH	Technology
MTRL	Materials
REAL	Real Estate
UTIL	Utilities
CASH	Cash
OTHR	Other

Example of an equity mutual fund applying a 130/30 strategy (UCITS):

Consumer Discretionary	11.77%
Consumer Staples	23.86%
Financials	17.35%
Health Care	27.58%
Industrials	8.81%
Technology	2.49%
Materials	7.57%
Utilities	-0.66%
Cash	1.23%

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The field **Bond Sector Breakdown** is applicable to bond funds and highlights the effective sector exposure of the fund (delta-adjusted). In the openfunds standard, the following sectors are used:

openfunds value ID	openfunds value name
COMM	Communication Services
COND	Consumer Discretionary
CONS	Consumer Staples
ENER	Energy
FINA	Financials
HLTC	Health Care
INDS	Industrials
TECH	Technology
MTRL	Materials
REAL	Real Estate
UTIL	Utilities
GOVN	Government
GOVR	Government-Related Regional and Local
GOVB	Government-Related Development Bank and Supranational
ABSE	ABS
CASH	Cash
OTHR	Other

ABS should include sub asset classes such as MBS (Mortgage Backed Securities). Corporate covered bonds (e.g. Swiss or German Pfandbriefe) should be assigned to the Financials sector.

The field **Market Cap Breakdown** is applicable to equity funds and describes the market capitalization of the underlying equity exposure (excluding cash and other positions). The methodology/thresholds of the benchmark provider of the fund (defined in field Benchmark OFST023200) should be used to define Large, Mid and Small Caps.

If the fund does not have a benchmark, the categories are based on standards applicable to the equity market(s) that the fund is invested in. Major index providers covering the local markets may also provide further guidance on the classification.

Examples: For the US market, the following thresholds for free float market capitalization of the underlying companies could be applied:

<b>Free Float Market Capitalization</b>	<b>openfunds value ID</b>	<b>openfunds value name</b>
> USD 10 billion	LCAP	Large Cap
USD 2 billion - USD 10 billion	MCAP	Mid Cap
< USD 2 billion	SCAP	Small Cap

For the Swiss Market, the index structure of the Swiss Performance Index (SPI®) provided by © SIX Group could be used. The index is divided into the sub-indices SPI® Large, SPI® Mid and SPI® Small. Further details can be found in the SPI Family Factsheet<sup>9</sup>.

The field **Credit Rating Breakdown** is applicable to bond funds and provides details on the exposure per rating category. Please refer to section “Bond Ratings and Ratios” for rating aggregation if a single bond is rated by various agencies. The related exposures are also derivable from TPT (Solvency II Tripartite Template). TPT uses the “EU Regulation (Solvency II)”- methodology to aggregate ratings.

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<sup>9</sup> [https://www.six-group.com/exchanges/indices/data\\_centre/shares/spi\\_family\\_en.html](https://www.six-group.com/exchanges/indices/data_centre/shares/spi_family_en.html)

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The field **Maturity Breakdown** is applicable to bond funds and money market funds. It is based on the effective maturities of the underlying investments. In case of callable assets, the first call date should be used. The following categories are available:

<b>Bond (Fixed Income)</b>	<b>Money Market</b>
0-1y	Overnight
1-2y	0-1w
2-3y	1-4w
3-4y	1-2m
4-5y	2-3m
5-6y	3-4m
6-7y	4-5m
7-8y	5-6m
8-9y	6-7m
9-10y	7-8m
10-15y	8-9m
15-20y	9-10m
20-25y	10-11m
25-30y	11-12m
>30y	>12m

The weighting of the related figures should result in the Average Effective Maturity.

## Calculation of Net Exposure

If derivatives are used by the funds, they should be included in the above calculations with option-/delta-adjusted values (delta-adjusted values for options, notional exposure for futures etc.). In case of funds using derivatives, the sum of the categories must not add up to 100%.

Regarding the calculation of exposures for derivatives, please use the Open Protocol definitions in section GP15 of the Open Protocol Manual (<https://www.sbai.org/toolbox/open-protocol-op-risk-reporting/>).

Example of equity mutual fund applying a 130/30 strategy (only the first column “Net Exposure” should be reported):

	Reported	<i>Not reported</i>	<i>Not reported</i>	<i>Not reported</i>
<b>Sector</b>	<b>Net Exposure</b>	<i>Gross Exposure</i>	<i>Gross Long Exposure</i>	<i>Gross Short Exposure</i>
Consumer Discretionary	11.77%	11.77%	11.77%	0%
Consumer Staples	23.86%	23.86%	23.86%	0%
Financials	17.35%	28.05%	22.70%	5.35%
Health Care	27.58%	27.58%	27.58%	0%
Industrials	8.81%	13.23%	11.02%	2.21%
Technology	2.49%	2.49%	2.49%	0%
Materials	7.57%	7.57%	7.57%	0%
Utilities	-0.66%	5.28%	2.31%	2.97%
Cash	1.23%			

## File Structure

The ratio and exposure information can either be transmitted in a **single file combining ratio and exposure data** (*combined delivery*), or **separate files for breakdown and non-breakdown data** (*split delivery*) as detailed below. In both cases transmission of this data should be separate to other openfunds data, such as openfunds Static Data (OFST) deliveries. As the distribution fields OFST020430 Annual Distribution At Fiscal Year End and OFST020435 Annual Distribution Yield At Fiscal Year End are part of the openfunds Static Data (OFST) range rather than the openfunds Fund Ratios and Exposures (OFRE) range, they should typically be delivered in an OFST delivery, rather than with OFRE fields. Other formats than XLSX may be used, such as CSV etc.

### Combined delivery

For this option, the file must be in a narrow table format as some of the fields contain name (value type):value combinations. More information about the narrow table format can be found in the openfunds white paper 'Flat Table versus Narrow Table' (<https://www.openfunds.org/knowledge/whitepapers/flat-narrow-table/>).

The typical column setting will look like this (without colors and lines, which are used here for illustrative purposes):

OFST020000	OFRE100000	OFRE100100	OFRE100105	OFRE100108	OFRE100109	OFRE100110
ISIN	Fund Ratios And Exposures Valuation Date	Fund Ratios And Exposures Data Type	Fund Ratios And Exposures Field Name	Fund Ratios And Exposures Value Type	Fund Ratios And Exposures Value Type ID	Fund Ratios And Exposures Value
LU0123456789	31/01/2020	OFRE000010	Number Of Positions			178
LU0123456789	31/01/2020	OFRE000030	Share Of Top 25 Investments			0.532986
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Adidas	DE000A1EWWV0	0.05682
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	L'Oreal S.A.	FR0000120321	0.048926
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	BT Group PLC	GB0030913577	0.04875
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Danone	FR0000120644	0.047628
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Siemens N	DE0007236101	0.0431
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Ahold Delhaize N.V.	NL0011794037	0.0393409
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	BNP Paribas ACT.A	FR0000131104	0.0321898
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Vinci S.A.	FR0000125486	0.026429
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Telefonica S.A.	ES0178430E18	0.019373
LU0123456789	31/01/2020	OFRE000050	Top Ten Positions	Fresenius	DE0005785604	0.01889
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	UK		0.247246
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	DE		0.255622
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	FR		0.24
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	CH		0.176882
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	IT		0.08025
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Consumer Discretionary	COND	0.1177
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Consumer Staples	CONS	0.2386
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Financials	FINA	0.1735
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Health Care	HLTC	0.2758
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Industrials	INDS	0.0881
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Technology	TECH	0.0249
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Materials	MTRL	0.0757
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Utilities	UTIL	-0.0066
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Cash	CASH	0.0123
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Large Cap	LCAP	0.525839
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Mid Cap	MCAP	0.1888743
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Small Cap	SCAP	0.11746
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Cash	CASH	0.1678267
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....

Different colours indicate different ISINs (share classes). Only primary listing in case of ETFs.

OF-ID to identify openfunds field, whose value is mentioned in OFRE100110 Fund Ratios And Exposures Value

Optional as OFRE100100 Fund Ratios And Exposures Data Type defines field

OFRE100100 Fund Ratios And Exposures Value Type defines values and whether this has to be kept empty (NULL)

Optional as OFRE100108 Fund Ratios And Exposures Value Type defines field

Lines separate fields for same ISIN

### Combined delivery format example

Any field in the OFRE range (plus identifiers like OFST020000) is accepted in this type of delivery.

## Split delivery

The data may alternatively be delivered with the non-breakdown data (fields OFRE000010-OFRE000499) in a separate flat table, with breakdown data (fields OFRE000500-OFRE000999) delivered in the same type of file as described above, so the two deliveries would follow the below two examples:

OFST020000	OFRE100000	OFRE000010	OFRE000015	...	OFRE000400	OFRE000405
ISIN	Fund Ratios And Exposures Valuation Date	Number Of Positions	Number Of Target Fund Positions	...	Weighted Average Maturity	Weighted Average Life
LU0123456789	31/01/2020	178	40	...	50.2	70.6
GB0001531424	31/01/2020	263	65	...	38.5	59.3
...	...	...	...	...	...	...

Different colours indicate different ISINs (share classes). Only primary listing in case of ETFs.

OF-ID to identify openfunds field, whose value is mentioned below as in the openfunds static data file structure

### Split delivery format example (flat table fields)

In the split flat table format, only fields in the range OFRE000001-OFRE000499 (plus identifiers like OFST020000) are supported in the file.

OFST020000	OFRE100000	OFRE100100	OFRE100105	OFRE100108	OFRE100109	OFRE100110
ISIN	Fund Ratios And Exposures Valuation Date	Fund Ratios And Exposures Data Type	Fund Ratios And Exposures Field Name	Fund Ratios And Exposures Value Type	Fund Ratios And Exposures Value Type ID	Fund Ratios And Exposures Value
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Adidas	DE000A1EWWW0	0.05682
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	L'Oreal S.A.	FR0000120321	0.048926
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	BT Group PLC	GB0030913577	0.04875
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Danone	FR0000120644	0.047628
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Siemens N	DE0007236101	0.0431
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Ahold Delhaize N.V.	NL0011794037	0.0393409
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	BNP Paribas ACT A	FR0000131104	0.0321898
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Vinci S.A.	FR0000125486	0.026429
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Telefonica S.A.	ES0178430E18	0.019373
LU0123456789	31/01/2020	OFRE000500	Top Ten Positions	Fresenius	DE0005785604	0.01889
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	UK		0.247246
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	DE		0.255622
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	FR		0.24
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	CH		0.176882
LU0123456789	31/01/2020	OFRE000520	Country Breakdown	IT		0.08025
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Consumer Discretionary	COND	0.1177
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Consumer Staples	CONS	0.2386
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Financials	FINA	0.1735
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Health Care	HLTC	0.2758
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Industrials	INDS	0.0881
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Technology	TECH	0.0249
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Materials	MTRL	0.0757
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Utilities	UTIL	-0.0066
LU0123456789	31/01/2020	OFRE000560	Sector Breakdown	Cash	CASH	0.0123
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Large Cap	LCAP	0.525839
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Mid Cap	MCAP	0.1888743
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Small Cap	SCAP	0.11746
LU0123456789	31/01/2020	OFRE000570	Market Cap Exposures	Cash	CASH	0.1678267
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....
GB0001531424	31/01/2020	OFRE.....	.....	.....	.....	.....

Different colours indicate different ISINs (share classes). Only primary listing in case of ETFs.

OF-ID to identify openfunds field, whose value is mentioned in OFRE100110 Fund Ratios And Exposures Value

Optional as OFRE100100 Fund Ratios And Exposures Data Type defines field

OFRE100100 Fund Ratios And Exposures Data Type defines values and whether this has to be kept empty (NULL)

Optional as OFRE100108 Fund Ratios And Exposures Value Type defines field

Lines separate fields for same ISIN

### Split delivery format example (narrow table fields)

In the split narrow table format, only fields in the range OFRE000499-OFRE000999 are allowed in field OFRE100100 Fund Ratios and Exposures Data Type.

## Document Information

<b>Title:</b>	Fund Ratios and Exposures
<b>Language:</b>	English
<b>Confidentiality:</b>	Public
<b>Authors:</b>	Daniel Koch, Tim Gutzmer, Charlie Duffin

## Revision History

<b>Version</b>	<b>Date</b>	<b>Status</b>	<b>Notice</b>
1.13	2021-04-07	Final	Clarified allowed fields in File Structure
1.12	2021-02-12	Final	Modification to examples and field names for v1.27.
1.11	2021-01-20	Final	Modified File Structure to allow for split deliveries
1.10	2020-09-10	Final	Updated link to EFC categories in footnote 1.
1.00	2020-06-11	Final	
0.25	2020-06-03	Draft	Input committee
0.11	2020-01-24	Draft	Input working groups
0.05	2019-11-06	Draft	Input feedback
0.01	2019-10-01	Draft	First draft

## Implementation

If you have any questions about the new data type or difficulties with implementation please contact us at [businessoffice@openfunds.org](mailto:businessoffice@openfunds.org).

## Joining openfunds

If your firm has a need to reliably send or receive fund data, you are more than welcome to use the openfunds fields and definitions free-of-charge. Interested parties can contact the openfunds association by sending an email to: [businessoffice@openfunds.org](mailto:businessoffice@openfunds.org)

**openfunds.org**  
c/o Balmer-Etienne AG  
Bederstrasse 66  
CH-8002 Zurich  
Tel.: +41 44 286 80 20  
Email: [businessoffice@openfunds.org](mailto:businessoffice@openfunds.org)  
Website: <https://www.openfunds.org>



