

Markit ETF Collateral Lists

Filtering criteria & FAQ / version 1.0

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List rules

- Each ETF will need to meet all the applicable filtering criteria as detailed below.
- Lists are subject to monthly additions and daily deletions of ETFs.
 - Additions: if a particular ETF meets all the criteria on for example the 15th day of the month that ETF will only be included in the list on the first working day of the following month.
 - Deletions: if an ETF fails to meet any of the applicable criteria on a particular day it will be excluded from the relevant list on that day. If on the next day the ETF meets all the criteria, it will be subject to the additions rule and will only be included on the first working day of the following month.
- Both equity and fixed income lists will be published via flat file on a daily basis, excluding weekends, at approximately 6:45am BST/GMT

Distribution

- The schedules are to be published via the following channels
 - Limited data available on Markit.com
 - Full detailed data via Markit ETP Analytics web portal
 - Full detailed data via Markit datafeed – flat file via SFTP

Filtering criteria

***For all ETF classification system (ECS) fields please refer to Markit ECS document**

Markit ETF Collateral Physical Equity

	Equity Filter	Description
ECS - Geographical exposure * Page 8 ECS Document	United Kingdom, United States, Canada, France, Germany, Japan, Switzerland, Eurozone	Identifies if a fund has exposure to a specific country or region. The Country/Region attribute in ECS specifies the geographic exposure of an ETF with a two-layer system, namely Focus Region and its subset, Geographic Exposure. The list of Focus region includes: Global, Africa, Asia, Europe, Latin America, Middle East and North America. Each ETF would be labelled either Country or Region, and then placed in specific geographic exposure within Focus region.
Asset class exposure	Equity	The asset class exposure identifies the types of assets that will be found in a fund's composition. The following asset classes currently utilized in Markit's ETP Classification System are: Equity, Fixed Income, Currency, Commodity, and Alternative.

	Equity Filter	Description
Benchmark	CAC40, S&P100, S&P500, EuroStoxx50, FTSE 100, SMI, DAX30, Nikkei225, TSX60	The benchmark is an index or asset whose return a passively managed ETP seeks to replicate (before fees and expenses). For actively managed ETPs, this field would be labelled as "Actively Managed". We use tracking error calculations to measure how closely ETF returns match those of the benchmark. The essential factors to determine a unique index are the index name, return variant and currency.
ETP leverage	1	ETP leverage is a multiplication factor that describes the fund's intended return ratio in relation to the overall market. The leverage factor is usually achieved through the use of derivatives such as swaps or by tracking an amplified variant of an index.
Holding type	Physical	The holding type of a fund gives a general description of assets held by a fund. In order to streamline the multiple types of assets held by funds across the globe, Markit devised a methodology to consolidate holding types. The holding type in the Markit ETP Encyclopedia is indicative of the core holdings of the fund. For instance, if a fund holds a basket of equities, but is allowed to use derivatives for certain hedging purposes, the fund holding type would be "Physical". In contrast, a fund that holds equities and uses an option call writing strategy or swaps to employ leverage would have a holding type of "Hybrid" since these instruments would be considered part of the core portfolio holdings.
Management structure	Replicated or optimised	This shows how shareholders can expect a fund to be managed. A replicated fund structure indicates that the manager will intend to match the holdings and returns of a stated benchmark. An optimized structure is when the manager will use a proprietary method to pick a sampling of holdings to replicate the returns of a stated benchmark. An actively managed fund is one in which no benchmark is used and portfolio holdings are left up to the discretion of the manager.
Assets under management	> \$100M	Total market value of investments managed by the fund, converted to USD.
Absolute median tracking difference	< 1%	Tracking difference quantifies the ability of a fund to track its benchmark by showing the extent to which an index product's NAV return differs from that of its benchmark. Excess Returns shows how a product's (ETF) performance compares with that of its index benchmark over the period of time. It can be positive or negative which indicates the extent to which the fund has outperformed or underperformed its benchmark index.

Markit ETF Collateral Physical Fixed Income

	Fixed Income Filter	Description
ECS - Geographical exposure * Page 8 ECS Document	Germany, France, United Kingdom, United States	Identifies if a fund has exposure to a specific country or region. The Country/Region attribute in ECS specifies the geographic exposure of an ETF with a two-layer system, namely Focus Region and its subset, Geographic Exposure. The list of Focus region includes: Global, Africa, Asia, Europe, Latin America, Middle East and North America. Each ETF would be labelled either Country or Region, and then placed in specific geographic exposure within Focus region.
Asset class exposure	Fixed income	The asset class exposure identifies the types of assets that will be found in a fund's composition. The following asset classes currently used in Markit's ETP Classification System are: Equity, Fixed Income, Currency, Commodity, and Alternative.
ECS - Investment focus * Page 8 & 18 ECS Document	Government, Sovereign, Treasury	Investment Approach indicates the broad focus of the ETP.
ECS - Investment approach * Page 7 & 16 ECS Document	Short term, intermediate term	Investment Focus provides a sub-sector distinction or the most detailed risk exposure of the investment.
ETP leverage	1	ETP leverage is a multiplication factor that describes the fund's intended return ratio in relation to the overall market. The leverage factor is usually achieved through the use of derivatives such as swaps or by tracking an amplified variant of an index.
Holding type	Physical	The holding type of a fund gives a general description of assets held by a fund. In order to streamline the multiple types of assets held by funds across the globe, Markit devised a methodology to consolidate holding types. The holding type in the Markit ETF Encyclopedia is indicative of the core holdings of the fund. For instance, if a fund holds a basket of equities, but is allowed to use derivatives for certain hedging purposes, the fund holding type would be "Physical". In contrast, a fund that holds equities and uses an option call writing strategy or swaps to employ leverage would have a holding type of "Hybrid" since these instruments would be considered part of the core portfolio holdings.

Fixed Income Filter		Description
		This shows how shareholders can expect a fund to be managed. A replicated fund structure indicates that the manager will intend to match the holdings and returns of a stated benchmark. An optimized structure is when the manager will use a proprietary method to pick a sampling of holdings to replicate the returns of a stated benchmark. And an actively managed fund is one in which no benchmark is used and portfolio holdings are left up to the discretion of the manager.
Management structure	Replicated or optimised	
Assets under management	> \$100M	Total market value of investments managed by the fund, converted to USD currency
Absolute median tracking difference	< 1%	Tracking difference quantifies the ability of a fund to track its benchmark by showing the extent to which an index product's NAV return differs from that of its benchmark. Excess Returns shows how a product's (ETF) performance compares with that of its index benchmark over the period of time. It can be positive or negative which indicates the extent to which the fund has out or underperformed its benchmark index.

Median tracking difference calculation

Median tracking difference is calculated as the median of the daily tracking difference over the past one month.

Where:

Tracking difference

$$TD_t = (ETP \text{ NAV total return (ccy) with div reinvestment inclusive of fees}_t) \times \left(\frac{\text{benchmark index leverage ratio}}{ETP \text{ leverage ratio}} \right) - (\text{benchmark index return (NAV ccy)}_t)$$

Where

TD = Tracking Difference

$$\begin{aligned} & \text{ETP NAV total return (ccy) with div reinvestment inclusive of fees} \\ &= \frac{\text{ETP NAV (ccy) with div reinvestment inclusive of fees}_t}{\text{ETP NAV (ccy) with div reinvestment inclusive of fees}_{t-1}} - 1 \end{aligned}$$

$$\text{Benchmark Index Return (NAV ccy)} = \frac{\text{benchmark index return (NAV ccy)}_t}{\text{benchmark index return (NAV ccy)}_{t-1}} - 1$$

ccy = NAV base currency of ETP

$NAV \text{ ccy}$ = NAV base currency

Median tracking difference

$$M = TD_t, TD_{t-1}, TD_{t-2} \dots TD_{t-n}$$

Where

M = Median

n = maximum number of trading days in previous rolling 1 month

FAQ

- Detail how you will track the change of an ETP from being physically replicating to synthetic and vice-versa?
 - Fields such as “Holding Type” are updated when the ETF is set up upon launch of the fund. Markit has strong relationships with many of the providers of synthetically replicated ETFs through our PCF business therefore we are well prepared when customers migrate from synthetic to physical.
 - Regardless of whether the issuer is a customer of Markit PCF services, Markit receives and monitors notifications from ETF providers regarding changes to their funds as a by-product of our ETF Trade Data product, which has a full coverage of the ETF universe. These notifications are shared with the ETF reference data staff, who manage the ETP encyclopaedia.

- Should a particular ETP issuer be unable to provide updated security level information (e.g. latest AUM or NAV) on any given working day, what is your process?
 - In case data is not received from providers, the Markit operations team follows up directly with the provider to receive the data. The collateral schedule results are based on the latest trade data. In case the data is delayed by the time the file is generated, the previous day's value will be used. If a value has not been received for more than 7 working days the fund will be removed from the schedule.
 - Tri-party agents will also be able to apply their standard pricing filter process in addition to the criteria detailed in this document. For example if the tri party is not able to price the ETF using traded market prices for a set number of days it can be removed from the list by the agent.

- What controls & checks take place before the constituent information is published to consumers of the data?
 - For any new ETF meeting the criteria, the Markit operations team applies additional checks on ETF reference and trade data. The daily quality checks are applied while the trade data is processed. The trade data is used to create AUM and median tracking difference calculations used in the filtering process.

- Are there any manual steps in the process that you believe will require automation before the ETP filter list could be expanded?
 - All processes will be automated.

- What (if any) material deviation from your normal index calculation process does this ETF collateral schedule represent?
 - The ETF collateral schedules are calculated and supported via two existing Markit products, ETP Encyclopedia and ETP Analytics. Both of these products fully supported. The ETF schedules do not have a material deviation from our normal daily processes.

- How frequently is the information published to consumers?
 - Via datafeed on a daily basis at 6:45am GMT.
 - Via Markit webportal as soon as information is processed for a particular region. For example US ETFs are processed at approximately 12pm GMT.

- Are you relying on any other party to help you construct the filter?
 - We rely on receiving accurate and timely information from ETF issuers and benchmark providers.

- Can you describe your escalation procedures in the event of an issue arising (technological or operational)?
 - Automated checks are in place to monitor the daily file delivery. In case of technical failure; this will escalate to the Markit development team as a priority. Any issues with the daily trade data (AUM and tracking) are picked up by the Markit operations team. There may be dependencies on the providers help in resolving the issue. In case of the collateral file delays, clients will be notified by the Markit client services team in line with Markit's standard support structure. Escalation document available on request.

- Have you introduced any bespoke technology solutions to support the Markit ETF Collateral Schedules?
 - No

- What kind of quality control procedures do you have in place?
 - For any new additions to a collateral schedule an additional review of the reference (encyclopedia) data and trade data will be performed.
 - The Markit operations team performs the following data quality checks
 - Trade data (NAV, shares outstanding and index close values) outlier validation
 - Missing/delayed data validation
 - In addition, the operation team is currently working on an advanced data quality tool expected to be implemented in the 3rd quarter of 2015

- Can you detail your operational process; also include technology, used to support the creation of the filter?
 - The operational process consist of the following parts:
 1. The reference (encyclopedia) data used as part of criteria is added when an ETP is set up. Any further updates are performed based on the providers' notifications and existing/parallel relationships as described above in our PCF and ETP Trade Data businesses.
 2. The trade data (NAV, shares outstanding and index close values) are processed before the relevant regional market opens. During data processing, Markit operations team performs daily quality checks.
 3. The calculations for AUM and median tracking difference are calculated before the relevant market opens.
 4. Additional quality checks on the reference and trade data will be applied in advance of any new ETF additions meeting the criteria and added to the list on the first working day of the month.
 - The technology used in all processing is proprietary to Markit. The tools have been developed over 10 years in support of our index and ETP aggregation & validation services. Built on established Windows technology, and continually being enhanced, we are able to leverage our global technology resources.

- Do you foresee any particular challenges ahead in the growth of ETP collateral filters?
 - No

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