

# THOMSON REUTERS LIPPER ACTIVE INDICES

Calculation Methodology

**VERSION 2.3**

Calculation ID: 1111

Updated: June 18, 2016

## THOMSON REUTERS ACTIVE INDICES CALCULATION METHODOLOGY

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### SIMPLE DEFINITION

Thomson Reuters Lipper's Active Indices are the first active classification benchmarks available in the marketplace. They represent the various Lipper classification styles such as large-cap growth, small-cap value, or emerging markets as well as selected country specific trade group schemas (IMA). The Active Indices help fund companies fill the analytical void that has existed in explaining individual fund performance versus a given investment objective or classification<sup>1</sup> (peer groups). This is done by aggregating peer group level holdings into a portfolio that allows investment professionals to understand the current and historical sector, industry, country, and security positions taken by their actively managed peers.

### ADVANCED DEFINITION

Constructing the Active Indices is a process that takes place each month coinciding with the frequency of portfolio collection at Lipper. The nature of Lipper's comprehensive portfolio collection process makes it possible to construct Active Indices with a 50-day lag from the snapshot month-end date. However, Lipper creates the UK Active Indices with a 15-day lag from the snapshot month-end date. Once the batch data is completely clean and stored, two days are spent creating and testing the Active Index component mix to ensure it represents the corresponding peer group.

Active Indices are created at the peer group level. Figure 1 lists the Active Index modules and the available Active Indices within each module.

**Figure 1: Active Index Modules and Indices**

US Domiciled Fund Active Index Modules		
USDE	Sector	International Classification
Large-Cap Core (LCCE)	Real Estate (RE)	Global Large Cap Core (GLCC)
Large-Cap Growth (LCGE)	Natural Resources (NR)	Global Large Cap Growth (GLCG)
Large-Cap Value (LCVE)	Health/Biotech (H)	Global Large Cap Value (GLCV)
Mid-Cap Core (MCCE)	Utility (UT)	Global Multi Cap Core (GMLC)
Mid-Cap Growth (MCGE)	Financial Services (FS)	Global Multi Cap Growth (GMLG)
Mid-Cap Value (MCVE)	Science & Tech (TK)	Global Multi Cap Value (GMLV)
Small-Cap Core (SCCE)	Precious Metal Equity Funds (AU)	Global Small/Mid Cap (GSME)
Small-Cap Growth (SCGE)	Consumer Services Funds (CS)	International Large Cap Core (ILCC)
Small-Cap Value (SCVE)	Industrial Funds (ID)	International Large Cap Growth (ILCG)
Multi-Cap Core (MLCE)		International Large Cap Value (ILCV)
Multi-Cap Growth (MLGE)	<b>Intl Investment Objective</b>	International Multi Cap Core (IMLC)
Multi-Cap Value (MLVE)	Global (GL)	International Multi Cap Growth (IMLG)
Equity Income (EIEI)	International (IF)	International Multi Cap Value (IMLV)
	International Small Cap (IS)	International Small/Mid Cap Core (ISMC)
	European Region (EU)	International Small/Mid Cap Growth (ISMG)
	Emerging Markets (EM)	International Small/Mid Cap Value (ISMV)
	Pacific Region (PC)	
	China Region (CH)	<b>International Sector</b>
	Pacific ex Japan (XJ)	Global Real Estate (GRE)
		Global Natural Resources (GNR)
		International Real Estate (IRE)

<sup>1</sup> Investment objectives are based on prospectus language and classifications are based on full fund holdings.

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Each classification Active Index is constructed using the portfolios collected from the latest month-end date. Not all fund companies report portfolio holdings to Lipper on a monthly basis, so the Active Indices are created from the sample of funds that do. E.g., if a fund reports on a monthly basis, their holdings would be included in all monthly indices and if a fund reports on a quarterly basis, their holdings would be included in four monthly indices. Coverage (i.e., number of portfolios used to create an Active Index) for any given peer group fluctuates somewhat from month to month.

Lipper's objective is to create active benchmarks that closely mimic the performance movements of their respective peer groups. Since portfolio coverage varies from month to month, the Active Index is tested on how well its performance matches with that of the peer group average total return gross of expenses. Gross peer group return is calculated using Lipper's standard gross return calculation stored in the global calculation database. Active Index should maintain an extremely tight tracking error with its peer group performance over corresponding time periods. The annualized tracking error threshold for US diversified equity funds is 1% and 1.5% for all other peer groups.<sup>i</sup>

Equally important in constructing an Active Index is the fact that portfolio data is secure and impossible to trace to particular funds. In addition, fund size doesn't matter. Active Index component weights are aggregated based on each security's percentage of total assets in the portfolio. Using security percent of total assets to determine component weights is a unique method that allows us to create fund benchmarks where the funds are equally weighted and the component securities are market weighted. This helps to preserve continuity across portfolios with various amounts of assets under management and at the same time provides a representative, market weighted security benchmark. This process should be communicated to clients in an effort to reduce embargo periods.

All securities including the cash portion of the Active Index represent a simple average of the percent of total net assets held in each security across the portfolios used to build the index. Market values are determined for each security based on the product of aggregated weight (percent of total net assets) multiplied to the constant index market value of \$10 billion. Security market values are then divided by the corresponding month-end prices to get share values.

### INCLUSION CRITERIA

#### Fund Classification Methodologies for Active Indices

US Diversified Equity Classifications, US International Equity Classifications, US Sector Classifications.

Lipper Global Equity Classifications, IMA and ABI Equity and Mixed Asset Classifications.

#### Portfolio Inclusion Criteria for the Current Month

30 days delivery time plus 10 days to pass internal quality assurance – where a universe delivers more timely data, the system will run on exceptions.<sup>ii</sup>

After portfolio holdings disclosure embargoes have been applied.

Historical portfolios inclusion: all available portfolios in the system meeting the Active Indices maintenance requirements (see below).

#### Fund Type Inclusion Criteria

Funds eligible to be used in Active Indices include: Open-end funds in the Mutual Fund database. UK unit trusts for the ABIAI's.

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### Fund Type Exclusion Criteria

The following types of funds are not eligible to be used in Active Indices: Index funds (Index Tracker Attribute), exchange traded funds and fund of funds (FoF External and Internal attribute).<sup>iii</sup>

### Eligible Securities

The following security types are eligible to be used in an Active Index portfolio: Common stocks, preferred stocks, depository receipts, cash (including cash equivalents) and ETFs with no look-through. All securities must have a minimum market capitalization of \$100 million USD.<sup>iv</sup>

### ACTIVE INDICES CREATION AND MAINTENANCE REQUIREMENTS

In order to maintain statistically representative classification indices, the following Active Indices creation and maintenance hurdles will be applied.<sup>v</sup>

	Launch	Maintenance
Sector/Classification portfolio count	Minimum 5 unique	Minimum 3 unique
Portfolio available for AI Counts (Holdings in production ready to go)	Minimum 5 unique	Minimum 3 unique
<b>AND</b>		
Portfolio Coverage	Average number of portfolios $\geq 30\%$ over the last 12 months and no less than 20% in the current month	Average over past 12 months of 25% and greater than 20% in at least one of the last three consecutive months
<b>AND</b>		
TNA Coverage	Average TNA coverage $\geq 15\%$ over the last 12 months and no less than 10% in the current month	Average over past 12 months of 12.5% and greater than 10% in at least one of the last three consecutive months

### INDEX CREATION PROCESS

#### 1. Calculate Average Security Weights Including Cash

##### 1.1 Rules for Creating Average Percent of TNA Values

First, Lipper groups all funds by peer group and portfolio date. Only one unique instance of each security (including cash) will appear as a component in the final list (i.e., Active Index portfolio). Because many securities have multiple share classes and/or trade on multiple exchanges, each with a unique identifier, Lipper conducts an aggregation process (1.2).

##### 1.2 Aggregation

Aggregate securities including ADRs (adjusted by the ADR-to-share ratio) and foreign listings by parent company (key is the primary RIC maintained by Reuters<sup>vi</sup>). Cash equivalents must be identified and included in the cash weighting for each portfolio prior to calculating averages.<sup>vii</sup>

##### 1.3 Calculate Averages

Generate an average of the percent of TNA values for each security including cash across the portfolios of the particular peer group by using the following equation:  $a/n$  where:

$a$  = the sum of all of the percent of TNA values for every instance of a particular security or cash.  $n$  = all portfolios in a given peer group for a given month used to create the Active Index.

For example, if within the large-cap value AI for 31.12.2005, after the prior two steps, we know that MSFT (Microsoft) has a combined weight of 2.5% and there were 41 total portfolios used to create the AI. So we divide  $.025/41 = .00061$  to derive the average weight.

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The value .00061 is the initial “weight” that will be assigned to MSFT for the large-cap value AI for 30.12.2005. Later on, this initial weight will be used to calculate a market value,<sup>2</sup> a new weight, and finally a simulated shares value for that component in the index.

### 1.4 Exclude Securities with an Aggregated Weight of Zero

### 1.5 Create Cash Row and Column Data – Prepare to add cash as rows to table

Because cash is a component security in each index, the cash data as calculated above is coupled with a peer group code, identifier and price. Cash should be referenced in the currency assigned to the index. The currency assigned to the index is the primary currency for the sector itself.<sup>viii</sup>

For example all US AI’s will use the following reference for cash:

ID = CASH\_USD

Price = \$1

## 2. Trim the Index Constituents List

First, scale the weights including cash. Do this by calculating a sum of the market values. Divide each individual security’s market value by the sum of the index market value to create the revised weight. After this revision, the sum of the market cap weights will now sum to 1.

### 2.1 Trim Smallest 1% of Weights Excluding Cash

Sort the weights created above in descending order (includes cash). In a column next to the weights, begin to sum the weights. The first row of data in this new column is the weight of the first security. The second row is the sum of the second security’s weight plus the weight in row 1 of the new column as seen in the table below under the heading “sum of weights.” When the exercise is complete for all securities in the index including cash, the sum of weights will be one. The purpose of this step is to manage the list of securities while still maintaining the integrity of the index.<sup>ix</sup>

**Note:** Due to a legacy issue and a lack of developing resources, the code itself multiplies the weights by US\$10 Bil prior to the sort. This does not change results but needs to be recognized during testing.

Micro Obj	Portfolio Date	Cusip	Ticker Symbol	Holding Name	Shares	Price	Market Value	Weight	Sum of Weights	
LCVE	1/31/00	94974610	WFC	Wells Fargo	5002164.03	454	2270982470	0.43623115	0.436231155	KEEP!
LCVE	1/31/00	4590010	IBM	Intl Busine	2516339.08	654	1645685758	0.316118424	0.752349579	
LCVE	1/31/00	CASH_USD	CASH_USD	CASH_USD	568000000	1	568000000	0.109106653	0.861456232	
LCVE	1/31/00	61744644	MWD	Morgan St	3530013.63	77	271811049.5	0.052211961	0.913668193	
LCVE	1/31/00	44181510	HI	Household	5519979.09	43	237359100.9	0.045594114	0.959262307	
LCVE	1/31/00	88020810	TXN	Texas Instr	2502894.74	64	160185263.4	0.030769855	0.990032163	Remove From List
LCVE	1/31/00	2581610	AXP	American E	2078608.84	24	49886607.36	0.009582677	0.99961484	
LCVE	1/31/00	79387G10	SBC	SBC Commu	480650.2	0.417	2005100.96	0.00038516	1	

### 2.2 Remove the securities representing less than 1% of the index

Identify the security in which the sum of weights exceeds 1%. Remove all securities starting from zero to the first security identified with a sum of weights in excess of 1%.<sup>x</sup>

## 3. Reweigh Index with Remaining Securities Including Cash

Now that the securities representing the bottom 1% of weights has been trimmed, revised market values are created. For the remaining securities including cash in each index, sum the market values.

Divide each individual security’s market value by the sum of the index market value to create the revised weight. After this revision, the sum of the market cap weights will now sum to 1.<sup>xi</sup>

<sup>2</sup> Lipper refers to market capitalization as an individual company’s shares outstanding times its price. Market value is referring to the monetary value of the security held within a portfolio.

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### 4. Create Index Market Values

Initial market values are created by multiplying the percent of TNA weights for each security and cash by \$10 billion.<sup>xii</sup>

### 5. Final Data Table

#### 5.1 Create Share values in various currencies

Shares are calculated by dividing the security market values by their respective price in the primary currency for a given sector. At this point, we no longer need the market value column for client delivery. However, the market value column is valuable for testing, and client queries therefore should be stored.

Final table content and specifications:  
investment objective/classification code  
portfolio date  
identifier  
name  
shares  
price USD  
market value USD  
price EUR  
market value EUR  
price GBP  
market value GBP  
price CHF  
market value CHF  
price JPY  
market value JPY

#### 5.2 Update Portfolio Dates to Trade Dates

The final step is to convert the portfolio dates from month-end dates to last trading day of the month dates.

## ADDITIONAL SPECIFICATIONS

### Pricing Source

Lipper uses prices from the Reuters Ratios and Statistics File RAS. The price field used within the RAS file is NPRICE and the pricing date field is PDATE.

### Frequency

The Active Indices are created once every month. The indices are based on portfolio data that has a 50-day lag except UK, where there is only a 15-day lag.

### Portfolio Dates

Group funds with a portfolio date within three calendar days (inclusive) of the month-end date. Give these funds a new portfolio date (for the purpose of the AIs) of the last trading day of the month. For example, all fund holdings files delivered to Lipper with a portfolio date of 27.09.2001, 28.09.2001, 29.09.2001, or 30.09.2001 should be grouped together and given a "new" portfolio date of 28.09.2001.

Date format is dd.mm.yyyy. Funds with a portfolio date NOT within three calendar days (inclusive) of the month-end date should be disregarded.

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### Treatment of Short Positions

Short positions are netted against long positions and net short positions are allowed even if unlikely to occur.

### Asset Allocation Requirements

Asset allocation requirements are based on the Lipper fund classification definitions (see above Fund classification methodologies for Active Indices). Active Indices for Mixed Asset classifications will only be calculated on their respective equity and cash portion.

### Index Suspension

When an index does not anymore meet the minimum maintenance requirements, the index will be suspended. In order for the index to be reestablished, the minimum launch requirements must be met again. Once the launch requirements are met, and if the intervening months meet a minimum of 20% portfolio coverage and 10% TNA coverage, then where possible the missing months will be calculated. If the historical minimums can not be met or it is not feasible to calculate the missing data, then an index is relaunched with a price of 100. Lipper will store the old index as obsolete for future reference.

### Custom Active Indices

Custom Active Indices can be created with a specific list of target funds from a single Lipper fund classification. General index creation and maintenance requirements will apply as defined above (see *Active Indices Creation and Maintenance Requirements* section on page 5) depending on delivery method. Meaning if Lipper produces the index, it must meet requirements; however, if the calculation is used in desktop applications, the maintenance requirements may not apply. The funding list may contain more than one classification in which case the creation and maintenance requirements apply for each classification.

Further detail around custom indices will follow based on future product enhancements.

### Third-Party Attribution Providers

Lipper strives to work with its partners in order to recognize 99.5% of the securities in an active index.

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<sup>i</sup> Testing/QC. Calculate rolling one month annualised tracking errors between the sector average and AI. Highlight changes in tracking error. Also track changes in security weight from month to month and identify outliers.

<sup>ii</sup> Testing/QC. Verify that all portfolios available are included in the AI with proper embargo applied. QA report needs to return number of funds and assets included on a monthly basis.

<sup>iii</sup> Testing. Ensure these fund types are removed.

<sup>iv</sup> Testing. Ensure securities with less than US\$100M are removed.

<sup>v</sup> Testing. Ensure all combinations of launch and maintenance scenarios are tested. (i.e., pass A but not b. b not a, etc.)

<sup>vi</sup> Testing. Ensure the roll up (aggregation) works with securities traded on multiple exchanges but have the same primary RIC. Ensure ADR's are adjusted by the ADR to share ratio.

<sup>vii</sup> Testing. Make sure cash equivalents are included in the cash weight. Make sure cash data is coming from holdings data (not survey data).

<sup>viii</sup> Testing. Ensure that the proper currency has been assigned to cash.

<sup>ix</sup> Testing. Ensure prior to the sort securities with less than USD \$100 million are removed, the aggregation has removed duplicates, and cash is included.

<sup>x</sup> Testing. Ensure the bottom 1% of the security is removed.

<sup>xi</sup> Testing. Ensure the new weights add to 1 or 100%.

<sup>xii</sup> Testing. Ensure USD \$10 billion is being applied to revised weights, not the initial.



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