

Essential Metals Diversified Index

Methodology

November $30^{\rm th},\,2022$

Version History

Readers can access other versions of the methodology for the Essential Metals Diversified Index online when they become available on Compass Financial Technologies website (www.compass-ft.com).

Date	Version	Change	Author(s)		
November 30 th , 2022	1.0	Methodology Publication	Guillaume Le Fur and Edouard Mouton (Compass Financial Technologies)		

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1 Introduction

The Essential Metals Diversified Index (the ESSMETAL or the Index) is a diversified equally weighted excess return index designed with the objective to offer a representative exposure to the most liquid precious and industrials metals while respecting the following diversification rules: only one constituent can represent more than 20% with a strict maximum at 35%.

The Index is composed of a basket of Compass mono commmodity indices tracking the main liquid futures contracts whose underlying are precious metals or industrial metals. It is rebalanced monthly on the last Index Business Day of the month towards its Target Weights.

The Essential Metals Diversified Index combines expertises in commodities and index engineering to offer investors a diversified exposure to the main metals. The Index is compliant with the EU Benchmarks Regulation.

The *ESSMETAL* can be accessed online on the Compass Financial Technologies website (www.compass-ft.com) or on Bloomberg or Refinitiv.

The Index Administrator and Calculation Agent is Compass Financial Technologies (France). The Index Owner is Compass Financial Technologies SA.

2 Index Level Computation

The Essential Metals Diversified Index is composed of a basket of Compass mono commodity excess return indices, the *Underlying Component Indices* or *UCI*. Each *UCI* represents a rolling futures contracts position linked to the corresponding Underlying Component.

2.1 Definition

- *Index Business Day*, t: any day on which all futures exchanges on which Underlying Components are traded are open for trading.
- Underlying Business Day, t: any day other than a Saturday or Sunday on which the NYMEX CME is open for trading.
- Roll Period: the period of six Underlying Business Days from, and including, the fourth (4th) Underlying Business Day of the month to, and including, the ninth (9th) Underlying Business Day of the month.
- Roll Weight, RW_t : with respect to a future contract, the percentage of such future contract used in the Underlying Component Index Level computation on Underlying Business Day t.
- Diversification Rules Observation Day: any Index Business Day strictly preceding the 3rd to last Index Business Day of any month.
- *Diversification Rules Breaching Day*: any Diversification Rule Observation Day for which a breach of the diversification rules was observed.
- Rebalancing Determination Date:
 - the first Index Business Day preceding the last Index Business Day of any month or
 - any second Index Business Day following a Diversification Rules Breaching Day given that none of the 2 consecutive Index Business Days preceding such potential Rebalancing Determination Date is a Rebalancing Determination Date and that the Diversification Rules Breaching Day is occurring outside of a rebalancing period or
 - any Index Business Day on which an exceptional rebalancing is instructed by the Committee

RD(t) is with respect to Index Business Day t, the most recent Rebalancing Determination Date strictly preceding t.

• Index Currency: USD.

Outside of exceptional circumstances, Underlying Components are reviewed every year.

2.2 Index Mechanism

Index composition - Target Weights

The ESSMETAL is based on an equally weighted basket of industrials and precious metals Underlying Component Indices (weights are called the *Target Weights*).

As of November 30th 2022, the Underlying Components included in the ESSMETAL are the following:

Essential Metals Diversified Index						
Commodity	Underlying Component	Target Weight	Currency			
Gold	COMEX Gold futures contract	12.5%	USD			
Silver	COMEX Silver futures contract	12.5%	USD			
Palladium	NYMEX Palladium futures contract	12.5%	USD			
Platinum	NYMEX Platinum futures contract	12.5%	USD			
Aluminium	LME Aluminium futures contract	12.5%	USD			
Copper	COMEX Copper futures contract	12.5%	USD			
Zinc	LME Zinc futures contract	12.5%	USD			
Nickel	LME Nickel futures contract	12.5%	USD			

Table 1: Underlying Components and Target Weights

Index Rebalancing - Diversification rules control

Outside of exceptional circumstances and Index Disrupted Day, the Index rebalances toward the Target Weights every month, on the last Index Business Day of the month (R(t)).

- 1. On each Rebalancing Date R(t), the Index rebalances towards the Target Weights.
- 2. With respect to the Index Business Day t and Rebalancing Date R(t), Target Weights $TW_{R(t)}$ are implemented on the close of the Rebalancing Date R(t) following the Rebalancing Determination Date RD(t).
- 3. On each Index Business Day t, current index weights are computed to make sure the diversification constrains are still satisfied.

If at least the weight of one Underlying Component exceeds 35% or if more than two Underlying Components have a current weight between 20% and 35% on the close of an Index Business Day t which falls outside of any rebalancing period and strictly precedes the 3^{rd} to last Index Business Day of any month, then the second Index Business Day following such day will be a Rebalancing Determination Date if none of the 2 consecutive Index Business Days preceding such potential Rebalancing Determination Date is a Rebalancing Determination Date. The Index will then rebalance towards the Target Weights on the following Index Business Day.

2.3 Underlying Component Index Level Computation UCIL_t

With respect to each Underlying Component i, an Underlying Component Index UCI_i is computed. It represents a long only portfolio of futures contracts as described in the roll matrix in the Appendix.

Each Underlying Component Index rolls futures contracts positions from the 4^{th} Underlying Business Day of the month to the 9^{th} Underlying Business Day of the month.

On each Underlying Business Day t, for each Underlying Component i the level of UCI, UCIL, on t is calculated according to the following formula:

$$UCIL_{i,t} = UCIL_{i,t-1} \times \left(\frac{CP_{t,C_{i,t,new}} \times RW_{t,C_{i,t,new}} + CP_{t,C_{i,t,old}} \times RW_{t,C_{i,t,old}}}{CP_{t-1,C_{i,t,new}} \times RW_{t,C_{i,t,new}} + CP_{t-1,C_{i,t,old}} \times RW_{t,C_{i,t,old}}}\right)$$

(1)

Where,

• $CP_{t,C_{i,t,new}}$ is, with respect to Underlying Business Day t and Underlying Component i, the last available settlement price on t of the futures contract $C_{i,t,new}$ associated to Underlying Component i that is included in the Underlying Component Index UCI_i at the end of the Roll Period, as defined in the

Roll Matrix Table in the Appendix. If on t the exchange related to Underlying Component i is not open for trading then $CP_{t,C_{i,t,new}}$ is the settlement price available on the first Underlying Business Day preceding t which is not a trading holiday for Underlying Component i.

- $CP_{t,C_{i,t,old}}$ is, with respect to Underlying Business Day t and Underlying Component i, the last available settlement price on t of the futures contract $C_{i,t,old}$ associated to Underlying Component i that is included in the Underlying Component Index UCI_i before the Roll Period, as defined in the Roll Matrix Table in the Appendix. If on t, the exchange related to Underlying Component i is not open for trading then $CP_{t,C_{i,t,old}}$ is the settlement price available on the first Underlying Business Day preceding t which is not a trading holiday for Underlying Component i.
- $RW_{t,C_{i,t,new}}$ is, with respect to Underlying Business Day t and futures contract $C_{i,t,new}$ that is included in the Underlying Component Index UCI_i at the end of the Roll Period, the percentage of such contract used in the computation of $UCIL_i$ on Underlying Business Day t.
- $RW_{t,C_{i,t,old}}$ is, with respect to Underlying Business Day t and futures contract $C_{i,t,old}$ that is included in the Underlying Component Index UCI_i before the Roll Period, the percentage of such contract used in the computation of $UCIL_i$ on Underlying Business Day t.
- $UCIL_{i,t-1}$ is, with respect to Underlying Business Day t and Underlying Component i, the Level of the Underlying Component Index on the Underlying Business Day preceding t.

Roll Weight RW_t are determined as below:

Underlying Business Day	Roll Weight C_{new}	Roll Weight C_{old}
4th Underlying Business Day of the month	0%	100%
5th Underlying Business Day of the month	$1/6 \times 100\%$	$5/6 \times 100\%$
6th Underlying Business Day of the month	$2/6 \times 100\%$	$4/6 \times 100\%$
7th Underlying Business Day of the month	3/6 imes 100%	$3/6 \times 100\%$
8th Underlying Business Day of the month	$4/6 \times 100\%$	$2/6 \times 100\%$
9th Underlying Business Day of the month	$5/6 \times 100\%$	$1/6 \times 100\%$

Table 2: Roll Weight RW_t used in $UCIL_t$ computation

2.4 Index Level Computation IL_t

On each Index Business Day t, IL_t is calculated according to the following formula:

$$IL_{t} = \left(1 + \sum_{i \in N_{t}} W_{i,t} \times \left(\frac{UCIL_{i,t}}{UCIL_{i,R(t)}} - 1\right)\right) \times IL_{R(t)}$$

$$\tag{2}$$

With,

$$W_{i,t} = \begin{cases} TW_{i,\text{RD}(R(t))} & \text{if } R_i(t) = R(t) \\ W_{i,R(t)} \times \frac{UCIL_{i,R(t)} \times \text{IL}_{R(R(t))}}{UCIL_{i,R(R(t))} \times \text{IL}_{R(t)}} & \text{if } R_i(t) < R(t) \end{cases}$$
(3)

Where,

- RD(t) is the Rebalancing Determination Date with respect to Index Business Day t.
- $R_i(t)$ is with respect to Underlying Component Index *i* and Index Business Day *t*, the first Index Business Day strictly succeeding RD(t) and strictly preceding *t* on which the Underlying Component Index *i* is unaffected by an Underlying Component Disruption Event. If such a date does not exist, $R_i(t)$ is the first Index Business Day strictly following RD(RD(t)) and strictly preceding *t* on which the Underlying Component Index *i* is unaffected by an Underlying Component Disruption Event.
- R(t) is the most recent date in the set $\{R_i(t), i \text{ being an Underlying Component Index of the Underlying Component Indices listed in Table 5}.$
- $TW_{i,t}$ is, with respect to the Index Business Day t and Underlying Component Index i the Target Weight allocated to Underlying Component Index i as defined in Table 1.
- $UCIL_{i,t}$ is, with respect to Index Business Day t and Underlying Component Index *i*, the Underlying Component Index Level of Underlying Component Index *i* on t.
- $UCIL_{i,R(t)}$ is, with respect to Index Business Day t and Underlying Component Index *i*, the Underlying Component Index Level of Underlying Component Index *i* on R(t).
- $IL_{R(t)}$ is, with respect to Index Business Day t, the ESSMETAL Index level on Index Business Day R(t).
- IL_t is, with respect to Index Business Day t, the ESSMETAL Index level on Index Business Day t.

2.5 Underlying Component Disruption Event

With respect to Underlying Component Index i, an Underlying Component Disruption Event will be defined as any Index Business Day or Underlying Business Day upon which the trading of a futures contract involved in the calculation of the Underlying Component Index Level $UCIL_i$ is disrupted or the fair determination of its price is interfered with subject to the following:

- The contract settles at the limit (up or down) price set by the exchange.
- The contract trades on an exchange which is not open for trading on the specific day.
- The exchange upon which the contract trades, closes trading in that contract at a time prior to the published closing time, unless the altered closing time was brought to public attention by the closing time on the trading day prior to the day in question.
- The exchange upon which the contract trades is affected by an event that disrupts the ability of market participants to effect transactions in, or obtain market values for such contract.

If an Underlying Component Disruption Event occurs during the Roll Period for one or more Underlying Component Index futures contracts, such day is considered as an Index Disrupted Day for the related Underlying Component Index. The specific contracts involved are not rolled on that day. For those contracts, the *RW* remain identical to the values they had on the Underlying Business Day immediately preceding the Underlying Component Disruption Event day and the amount to be rolled will be carried forward until the next Underlying Business Day. The Roll Period may be extended for this or these particular Underlying Components Indices only until the next available Underlying Business Day upon which no Underlying Component Disruption Event occurs for that or those contracts.

If an Underlying Component Disruption Event occurs on a Rebalancing Date, such day is considered as an Index Disrupted Day for the related Underlying Component Indices. The Underlying Component Indices involved are not rebalanced. The rebalancing for the involved constituents will be postponed until the next available Index Business Day upon which no Underlying Component Disruption Event affecting the related Underlying Component Indices occurs.

If an Index Disrupted Day has been continuing with respect to the same Underlying Component Index for 10 consecutive Index Business Days (or for 10 consecutive Underlying Business Days), the Committee governing the Index may adjust the Index Methodology to preserve the economic characteristics of the Index.

The existence of an Underlying Component Disruption Event shall be determined by the Index Committee.

2.6 Exceptional Circumstances

In cases of exceptional circumstances making the calculation or the replication of the Index impossible or too complex, the Committee governing the Index can take any appropriate action.

2.7 Calculation frequency and dissemination

The Essential Metals Diversified Index is computed and published once a day on every Index Business Day.

Index levels are published on the Compass Financial Technologies website (www.compass-ft.com) and are distributed to Bloomberg and Refinitiv under the ticker symbols listed in table.

Index	Bloomberg Code	Refinitiv Code
Essential Metals Diversified Index	ESSMETAL Index	.ESSMETAL

 Table 3: Essential Metals Diversified Index Publication Codes

2.8 Rounding of Data

Underlying Component Index Levels are computed with 8 decimals and published with 4 decimals. Index Levels are computed with all decimals available and are published with 4 decimals. Underlying Component Index Levels are used with 4 decimals in formulas (2) and (3).

3 Index Governance

3.1 Index Administrator

Compass Financial Technologies (France) is the Administrator of the Index ("the Index Administrator"). The Index Administrator is responsible for the day-to-day management of the Index and is also responsible for decisions regarding the interpretation of these rules.

3.2 Index Calculation Agent

Compass Financial Technologies is the Calculation Agent of the Essential Metals Diversified Index. It is responsible for the day-to-day management of Indices computation according to this methodology.

3.3 Index Committees – Supervisor

Compass Financial Technologies has established governance functions to review and provide challenges on all aspects of the Index determination process. Governance functions are managed by the Compass Oversight Committee and by the Compass Commodity Index Steering Committee.

Compass Oversight Committee:

The Compass Oversight Committee oversees all areas of the benchmark determination processes. It is responsible for supervising and controlling the Index operations team on all Compass Indices. It is also responsible for:

- 1. Periodic review of incidents
- 2. Making final decisions in case the Index operations team are not capable or allowed to take decisions
- 3. Defining and implementing organisation procedures for the Index operations team
- 4. Defining and overseeing measures that allow for mitigation of operational risks
- 5. Supervising internal or external audit results
- 6. The implementation and supervision of the potential codes of conduct that have to be implemented

The Committee is comprised of senior representatives of Compass Financial Technologies and external industry experts.

Essential Metals Diversified Index Steering Committee:

The Essential Metals Diversified Index Steering Committee is responsible for:

- 1. Determining the calculation methodology and the rules governing the publication of the Essential Metals Diversified Index
- 2. Making periodic reviews of the Essential Metals Diversified Index to validate the robustness of the methodology and to analyse the impact of methodology changes
- 3. Organising consultation with Essential Metals Diversified Index stakeholders if necessary
- 4. Ensuring that the Essential Metals Diversified Index offers a reliable and representative view of the market

The Essential Metals Diversified Index Steering Committee is composed of members from Compass. The Committee may include individuals or representatives of companies, academics, external counsels, or market participants.

The Essential Metals Diversified Index Steering Committee assembles once a year in November. However, at the request of a member of the committee, the Committee may meet on any other day of the year to discuss potential "market emergency" and "force majeure" events or any other situation, which makes an extraordinary meeting necessary.

All Committee decisions will be published without delay following the Committee decision.

The Essential Metals Diversified Index Steering Committee members as of November 2022 are:

- Edouard Mouton, Compass Financial Technologies
- Guillaume Le Fur, Compass Financial Technologies

As of November 30th 2022, Guillaume Le Fur chairs the Steering Committee.

4 Methodology Changes - Maintenance

This methodology may be supplemented, amended in whole or in part, revised or withdrawn at any time. Supplements, amendments, revisions and withdrawals may also lead to changes in the way the Index is compiled or calculated or affect the Index in another way.

In the absence of exceptional circumstances affecting the Index calculation or methodology, this Methodology is reviewed annually. The review will includes, inter alia, the following points:

- 1. Verify if the methodology and computation are still in line with the original purpose of the Index
- 2. Make sure the quality and quantity of the input data remain sufficient

Changes made to this methodology are published after the review date and implemented on a reasonable time horizon.

Compass Financial Technologies may terminate the Essential Metals Diversified Index due to certain extraordinary market circumstances.

Changes or termination will be subject to the review and approval of the Essential Metals Diversified Index Steering Committee which will receive all the information related to the change or termination. In case of material changes, a notice will be provided at least two weeks in advance.

The results of the Essential Metals Diversified Index Steering Committee will be published in a press release on Compass Financial Technologies website and distributed timely to data vendors and major news sources.

5 Expert Judgment

The Essential Metals Diversified Index is based on written and transparent rules and procedures with the purpose of minimising as much as possible the exercise of discretion and expert judgment.

The Essential Metals Diversified Index is built from input data that is not interpolated, extrapolated or adjusted. In case of lack of data, the last available data is employed.

Nevertheless, the exercise of expert judgment may become necessary in case of errors and Index restatements, delayed and missing data or unexpected situations arising from market stress.

6 Errors and Recalculations

Even though the process of Index calculation is completely automated and pre-defined, an error can be discovered after the publication of the Index.

In case of a material error the Index may be redetermined, and the clients will be notified about the error and the date of the publication of the redetermined Index. An error is considered material on the basis of its size, the dates of its discovery and of its occurrence, and the impact of the Index redetermination on the users. The discovery of any error is reported to the Essential Metals Diversified Index Steering Committee.

In case a material error is discovered and the Administrator recognises a manipulation or an attempted manipulation of the Index level or the input data it will be reported to the regulator.

7 Cases Not Covered in Rules

In cases which are not expressly covered in these rules, operational adjustments will take place along the lines of the aim of the Index. Operational adjustments may also take place if, in the opinion of the Index Administrator, it is desirable to do so to maintain a fair and orderly market in derivatives on this Index and/or

this is in the best interests of the investors in products based on the Index and/or the proper functioning of the markets. The Index Administrator will report to the Supervisor if it took a decision about a case which is not specifically covered in the rules for comments and review.

8 Liability

The Index Administrator and the Supervisor are not liable for any losses resulting from supplementing, amending, revising or withdrawing the rules for the index. The Administrator will do everything within its power to ensure the accuracy of the composition, calculation, publication and adjustment of the Index in accordance with relevant rules. However, neither the Index Administrator, nor the Supervisor are liable for any inaccuracy in index composition, calculation and the publication of the Index, the information used for making adjustments to the Index and the actual adjustments. Furthermore, the Index Administrator and the Supervisor do not guarantee the continuity of the composition of the Index, the continuity of the method of calculation of the Index, the continuity of the dissemination of the index levels, and the continuity of the calculation of the Index.

Appendix

Roll Matrix Table

The table below displays the futures contracts included in each Underlying Component Index just before the beginning of the Roll Period.

As an example, during the Roll Period of March, the Compass Commodity Platinum Index is rolling from J contract (the old contract) to N contract (the new contract).

Commodity	Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gold	GC	G	J	J	Μ	Μ	Q	Q	Ζ	Z	Z	Ζ	G
Silver	SI	Η	Η	Κ	Κ	Ν	Ν	U	U	Z	\mathbf{Z}	\mathbf{Z}	Η
Palladium	PA	Η	Η	Μ	Μ	Μ	U	U	U	\mathbf{Z}	\mathbf{Z}	Z	Η
Platinum	PL	J	J	J	Ν	Ν	Ν	V	V	V	\mathbf{F}	F	\mathbf{F}
Aluminium	LA	Η	Η	Κ	Κ	Ν	Ν	U	U	Х	Х	\mathbf{F}	\mathbf{F}
Copper	HG	Η	Η	Κ	Κ	Ν	Ν	U	U	Ζ	\mathbf{Z}	Z	Η
Zinc	LX	Η	Η	Κ	Κ	Ν	Ν	U	U	Х	Х	F	\mathbf{F}
Nickel	LN	Η	Η	Κ	Κ	Ν	Ν	U	U	Х	Х	\mathbf{F}	F

Table 4: Futures Contracts Roll Matrix

Underlying Component Indices

Essential Metals Diversified Index								
Underlying Component Index	Bloomberg Commod		Underlying Component					
	\mathbf{Ticker}							
Compass Commodity Gold Index	CCTYGC	Gold	COMEX Gold futures					
Compass Commodity Silver Index	CCTYSI	Silver	COMEX Silver futures					
Compass Commodity Palladium Index	CCTYPA	Palladium	NYMEX Palladium futures					
Compass Commodity Platinum Index	CCTYPL	Platinum	NYMEX Platinum futures					
Compass Commodity Aluminium Index	CCTYLA	Aluminium	LME Aluminium futures					
Compass Commodity Copper Index	CCTYHG	Copper	COMEX Copper futures					
Compass Commodity Zinc Index	CCTYLX	Zinc	LME Zinc futures					
Compass Commodity Nickel Index	CCTYLN	Nickel	LME Nickel futures					

 Table 5: Underlying Component Indices

9 Disclaimer

Nothing contained herein shall constitute or shall be deemed to constitute a financial, legal, tax or other advice of any kind, or a solicitation to purchase, sell or invest in any financial products or to engage in any financial strategy. Compass Financial Technologies SA or any of its affiliates ("Compass") (i) does not guarantee the adequacy, the accuracy, the timeliness, the completeness, the evolution and/or the movements of its indices or any data included therein (the "Indices" or the "Index"), (ii) shall not have any liability for any errors, omissions, delays or interruptions therein and (iii) makes no warranty, express or implied, as to results to be obtained by owners of any securities, or by any other person or entity from the use of the Indices. Compass does not make any express or implied warranties, and expressly disclaims, all warranties of merchantability or fitness for a particular purpose or use with respect to the Indices. Without limiting any of the foregoing, in no event shall Compass have any liability for any lost profits or indirect, punitive, special or consequential damages or losses, even if notified of the possibility thereof.



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