DBIQ Diversified Commodity and DBIQ Optimum Yield Index Consultation

DBIQ announces a consultation on potential changes for the DBIQ Diversified Commodity and DBIQ Optimum Yield suite of indices. The Diversified Indices serve as broad-based commodity indices that aim to combine the essential elements of diversification and liquidity. This consultation covers a comprehensive review of the indices and is designed to reflect developments in the Commodities markets since the launch in 2009. The consultation covers two main sections:

1) Commodities Selection (Eligible Commodity review) & Weight Allocation and

2) Commodity Contract Selection.

The indices included in the consultation are listed below. The consultation will run until 31-Jul-24.

Index Name	Excess Return Ticker	Total Return Ticker
DBIQ Optimum Yield Diversified Commodity Index	DBLCDBCE	DBLCDBCT
DBIQ Diversified Agriculture Index	DBLCDBAE	DBLCDBAT
Deutsche Bank DBIQ Optimum Yield Energy Index	DBCMYEEN	
Deutsche Bank DBIQ Optimum Yield Crude Oil Index	DBCMOCLE	DBCMOCLT
Deutsche Bank DBIQ Optimum Yield Industrial Metals Index	DBCMYEIM	DBCMYTIM
Deutsche Bank DBIQ Optimum Yield Precious Metals Index	DBCMYEPM	DBCMYTPM
Deutsche Bank DBIQ Optimum Yield Gold Index	DBCMOGCE	DBCMOGCT
Deutsche Bank DBIQ Optimum Yield Silver Index	DBCMYESI	DBCMYTSI

Commodity Selection and Weight Allocation

Current Methodology:

The Diversified Commodity Index and Sector Indices have fixed commodity inclusion and weights, which are not subject to change on a predefined rebalancing schedule.

Proposed changes in Methodology:

Since the original index design, the liquidity and depth of commodity markets have grown materially, with dollar volumes doubling in the last 15 years. To reflect the development of the market, DBIQ proposes transitioning to a rule based *annual index review* that determines the eligible commodities and associated weights. This will be based on the liquidity of each commodity as determined by its Total Dollar Volume and its relative importance in the global economy as measured by its Dollar Production Value. Commodities are initially screened for inclusion based on their relative Total Dollar Volume. All commodities listed on major US and European exchanges in US Dollars that have a Total Traded Dollar Sector weight greater than 2% are included. Hypothetically applying this rule for 2023, this proposal would see 26 commodities selected in the DBIQ Optimum Yield Diversified Commodity Index.

The final weights for each eligible commodity are based on the average of the Total Traded Dollar Value and Dollar Production Value. To ensure the index remains broad based and diversified it is proposed that:

- no single sector will have a weight greater than 40% and no single commodity in the index will have a weight more than 12.5%;
- Within each sector there will also be a floor such that a single commodity will have an allocation within the sector of no less than 5%.

For DBIQ Optimum Yield Diversified Commodity Index this represents a dynamic floor, for example if the sector weight is 20% the floor of a commodity from that sector is 20% multiplied by 5% which equals a 1% floor at the overall index. The detailed methodology can be found in Annex 1. To provide an indication of the proposed change, the hypothetical weights for 2023 at both an index and sector level can be found in Table 1 as below.

It is also proposed that should there be a "material deviation"[1] in the weights during the year then an Intra Year Rebalancing event take place as detailed below.

Sector and Single Commodity Indices

It is proposed the sector and single commodity indices follow a similar methodology to the master DBIQ Diversified Commodity Index. Sector weights would be equal to the sector weights within the Diversified Commodity Index.

Table 1 : DBIQ Optimum Yield Diversified Commodity Index

				Proposed Weight	**Current Fixed Weight**
Sector	**RIC**	**Name**	**Exchange**	**2023**	**2023**
Energy	CL	Light Crude	CME	11.84%	12.38%
	HO	Heating Oil	CME	3.17%	12.38%
	RB	RBOB Gasoline	CME	3.19%	12.38%
	LCO	Brent Crude	ICE	12.50%	12.38%
	NG	Natural Gas	CME	5.62%	5.50%
	LGO	Gas Oil	ICE	3.67%	0.00%
		Sector Total		40.00%	55.02%
Industrial Metal	MAL	Aluminium	LME	4.18%	4.17%
	MZN	Zinc	LME	1.37%	4.17%
	MCU	Copper - Grade A	LME	5.97%	4.17%
	MNI	Nickel	LME	1.80%	0.00%
	MPB	Lead	LME	0.70%	0.00%
		Sector Total		14.02%	14.02%
Precious Metal	GC	Gold	CME	11.23%	8.00%
	SI	Silver	CME	2.09%	2.00%
		Sector Total		13.32%	10.00%
Agriculture	C	Corn	CME	5.53%	5.63%
	S	Soybeans	CME	4.79%	5.63%
	SM	Soybean Meal	CME	1.47%	0.00%
	BO	Soybean Oil	CME	1.97%	0.00%
	SB	Sugar #11	CME	1.54%	5.63%
	KC	Coffee "C"	ICE	1.63%	0.00%
	CC	Cocoa	ICE	1.63%	0.00%
	W	Wheat	CME	2.72%	5.63%
	KW	Wheat (Kansas Wheat)	CME	1.63%	0.00%
	CT	Cotton #2	ICE	1.63%	0.00%
	LC	Live Cattle	CME	3.30%	0.00%
	LH	Lean Hogs	CME	3.16%	0.00%
	FC	Cattle (Feeder Cattle)	CME	1.63%	0.00%
		Sector Total		32.63%	22.52%

[1] Where the live weight of a commodity exceeds 200% of the Final Target Weight as defined in Intra Year Rebalancing event section below

Table 2 : DBIQ Diversified Agriculture Index

			Proposed Weight	Current Fixed Weight
RIC	**Name**	**Exchange**	**2023**	**2023**
C	Corn	CME	16.94%	12.50%
S	Soybeans	CME	14.67%	12.50%
SM	Soybean Meal	CME	4.52%	0.00%
BO	Soybean Oil	CME	6.05%	0.00%
SB	Sugar #11	CME	4.71%	12.50%
KC	Coffee “C”	ICE	5.00%	11.11%
CC	Cocoa	ICE	5.00%	11.11%
W	Wheat	CME	8.32%	6.25%
KW	Wheat (Kansas Wheat)	CME	5.00%	6.25%
CT	Cotton #2	ICE	5.00%	2.78%
LC	Live Cattle	CME	10.12%	12.50%
LH	Lean Hogs	CME	9.69%	8.33%
FC	Cattle (Feeder Cattle)	CME	5.00%	4.17%

Table 3 : Deutsche Bank DBIQ Optimum Yield Energy Index

			Proposed Weight	Current Fixed Weight
RIC	**Name**	**Exchange**	**2023**	**2023**
CL	Light Crude	CME	29.61%	22.50%
HO	Heating Oil	CME	7.92%	22.50%
RB	RBOB Gasoline	CME	7.98%	22.50%
LCO	Brent Crude	ICE	31.25%	22.50%
NG	Natural Gas	CME	14.06%	10.00%
LGO	Gas Oil	ICE	9.18%	0.00%

Table 4 : Deutsche Bank DBIQ Optimum Yield Industrial Metals Index

			Proposed Weight	Current Fixed Weight
RIC	**Name**	**Exchange**	**2023**	**2023**
MAL	Aluminium	LME	29.80%	33.33%
MZN	Zinc	LME	9.77%	33.33%
MCU	Copper – Grade A	LME	42.58%	33.33%
MNI	Nickel	LME	12.85%	0.00%
MPB	Lead	LME	5.00%	0.00%

Table 5 : Deutsche Bank DBIQ Optimum Yield Precious Metals Index

			Proposed Weight	Current Fixed Weight
RIC	**Name**	**Exchange**	**2023**	**2023**
GC	Gold	CME	84.31%	80.00%
SI	Silver	CME	15.69%	20.00%

Intra Year Rebalancing event

In periods of heightened volatility or when commodity prices experience significant movements, the live weights of commodities in DBIQ Optimum Yield Diversified Commodity and sector indices may diverge from the annual Final Target Weights. DBIQ proposes a mechanism whereby commodities that diverge significantly from the Final Target Weight determined at the previous rebalance are reset. The reset is assessed monthly.

On the first business day of each month, the live weight on each Index business day of the previous month is observed.

If the **live weight ratio** i.e. live weight to target weight (set on previous Annual rebalance) exceeds 200% for 10 or more business days over the previous month, for one or more commodities, the weight of these commodities are reduced. This is done immediately from the 2nd Business Day of the month. This is known as an Extraordinary Weight Rebalancing.

All commodities subject to the Extraordinary Weight Rebalancing will have their live weight reduced to 150% of target weight (set on previous Annual rebalance). The excess weight from such commodities are redistributed across all commodities which have not exceeded live weight ratio of 200% and that do not have a live weight ratio of more than 150% on the observation date.

Commodity Contract Selection

Current method

Currently, most commodities in the indices use the Optimised Yield (OY) selection method where the contract with the highest roll yield is selected on each valid selection date. Some of the agriculture commodities follow a fixed roll schedule.

Proposed changes

DBIQ proposes two options for contract selection.

1) Move all commodities to a **Modified Optimum Yield** selection method.
2) Move to the **Optimum Yield Enhanced (OYE)** selection method. This was first launched by Deutsche Bank in 2011 and allocates on a monthly basis between a short, medium and long term contracts to create a more dynamic and reactive approach to investing across the commodity curve.

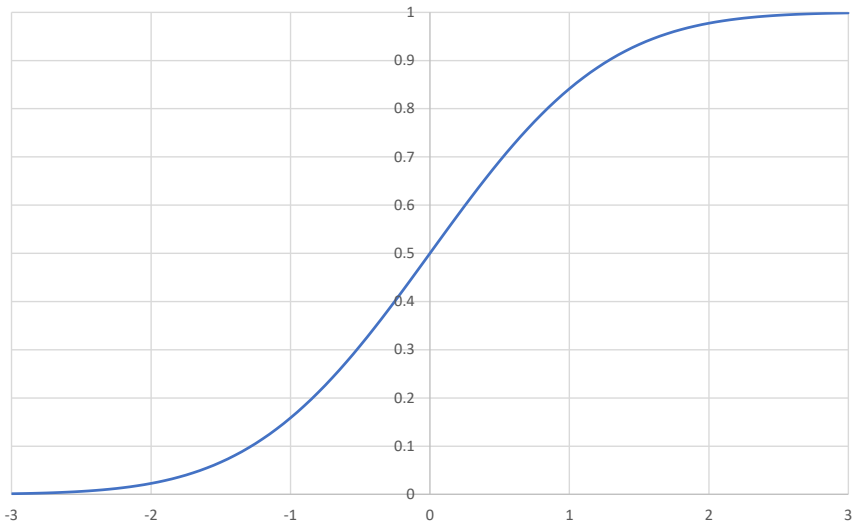
Modified Optimised Yield (OY) Proposal

The current OY index rules allow any future listed in the first 13 months to be selected on a valid selection date. The liquidity of the commodity contracts can vary across the curve, depending on time to expiry and the specific time of year. The proposed new rule would have a predefined set of eligible contracts for each month, from which, the contract with the highest roll yield would be selected. For each commodity and month, contracts that have not consistently exhibited minimum level of liquidity have been removed from the eligible selection list. For each commodity, the proposed eligible contracts are listed in Annex 2.

Optimised Yield (OYE) Proposal

The OYE indices were originally launched by Deutsche Bank in 2011 as a second-generation version of OY. The OYE indices rebalance monthly allocating across short, medium and long term contracts. The allocation is based on a Sharpe Ratio score. For each of the tenors, the Sharpe ratio is calculated as the ratio of the Roll Yield divided by the realised volatility. The Sharpe ratios are normalised to a score between 0 and 1 using the normal distribution function. This approach smooths the scores, and results in abnormally high or low scores being smoothed as demonstrated in chart 1. The weight allocated to each tenor is equal to its score divided by the sum of the three scores. If all three tenors have similar scores the weights are evenly distributed, whilst if one contract has a materially stronger score, it will receive a relative overweight position. The selection rules for OYE are described in Annex 3.

Chart 1 – Score verses Sharpe Ratio



Questions

Please provide answers to the following questions along with any further feedback and commentary you may have on the proposal.

1. Do you agree the indices should change to an annual rule based eligible contract review?
    a. If so, should the eligible exchanges be expanded to include those based outside of North America and Europe?
2. Do you agree the weight methodology should change to be based on a blended liquidity and production weight?
3. Do you agree sector and commodity caps should be enforced?
    a. If so, do you agree with the thresholds proposed?
4. Do you agree that an intra year rebalancing should be added to the rules?
    a. If so, do you agree with the thresholds proposed?
5. Do you agree the index should change to either the modified OY or OYE methodologies?

Annex 1 - Commodities Selection and Weight Allocation – Summary

Backtesting the proposed rule for 2023 selects 26 Commodity futures listed in Table 1. Liquidity is measured as a function of Total Dollar Volume (TDV) and its associated importance by the Dollar Production Value (DPV). The weight of each commodity is a derived based on its relative Liquidity and Dollar Production Value. Weights are then subject to caps and floors to create a level of diversification within the index.

For the Diversified Commodity Index, it is proposed that the weight of each sector in the index is capped at 40% and the weight of a single future in the index at 12.5%.

Within each sector, the minimum allocation for a single commodity is floored at 5% of that sector. DBIQ defines the commodity sectors as Agriculture (including Livestock), Energy, Industrial Metals, Precious Metals. A floor within the commodity sector rather than outright is proposed so that the weight distribution within a sector is not skewed due to the floor.

The annual commodity selection process is completed on the last business day of September, with the index rebalancing based on the new weights each November. The rules for commodity selection and weight determination are applied over four steps –

Step 1 – Eligible Commodity Identification

Commodity futures listed on major US and European exchanges, namely ICE, CME, LME and Minneapolis Grain Exchange are identified. Only futures quoted in USD are included. The total dollar volume traded on the exchange for each commodity and for each of the three preceding years are calculated. The observation period spans from the start of the preceding year's October up to the end of September. For all commodity futures the volume traded in only futures instruments is considered.

TDV (Total Dollar Volume): For each year is determined by multiplying the total volume of futures traded during the observation period by the One-year Average price.

One-year Average price: This is computed for each commodity using the average of the close prices of the front month contract on each month end from the preceding year's October up to the end of September.

Three-year total dollar volume: This is obtained by calculating the TDV for each year using data from the last three years and summing up the TDV values.

Initial sector liquidity weight: Weight of each commodity within its sector

This is calculated as proportion of the three-year total dollar volume of that commodity relative to the three-year total dollar volume of all commodities within its sector.

Any commodity with a weight less than 2% within its sector are excluded from the eligible universe.

Initial commodity weight: Weight of each commodity within the eligible universe

For each eligible commodity, the Initial commodity weight is then determined as a proportion of the three-year total dollar volume of that commodity relative to the three-year total dollar volume of all eligible commodities.

Step 2 – Determination Production weights & Initial Target Weights

Production weights are determined for each eligible commodity based on the total dollar amount of commodity produced within the year. Agriculture and Livestock production data is sourced from the UN Agencies Food and Agriculture Organization (FAO). Energy production data is sourced from UN Statistics Division (UNSD). Industrial and Precious metals production data is sourced from United States Geological Service (USGS). In all cases the most recent years published production data (actual or estimate) is taken.

Production dollar amount: This is determined as 3 Year average price of the active front month's futures contract for each commodity times the total commodity produced in most recent year.

3 Year average price calculation: For each commodity, we take the average of the close prices of the front month contract on each month end from October of the previous year to September of the current year. Next, we compute the final average price as average of the last 3 yearly average prices.

Production weights: This is calculated as proportion of the Production dollar amount of that commodity relative to the Production dollar amount of all commodities.

In cases where there are several commodities mapped to the same production data set, the weight is proportionally allocated based on their Initial commodity weight i.e., proportion of the Initial commodity weight of that commodity relative to the Initial commodity weight of all commodities mapped to the same production data set.

Initial Target Weights are the average of the Initial commodity weight and Production weight.

For each commodity, its **Initial Commodity Sector Weight** is then calculated based by normalising the **Initial Target Weights** for the eligible commodities within that Sector. The sum of all **Initial Commodity Sector Weight** in any given sector equals 100%.

Step 3 – Application of Weight Caps

In addition to the expanded universe, DBIQ proposes the addition of weight caps at the Sector and Commodity level. The sector cap is set such that no one sector can have a majority weight within the index. The commodity weight cap and floor are designed to ensure diversification of commodities across the sector.

The weight cap is performed iteratively using the following steps.

First, the sector cap is applied to determine the **Sector Target Weight**.

1. For each Sector, the **Initial Sector Weight** in the overall index is calculated as the sum of **Initial Target Weights of each eligible commodity within that sector.**
2. Any sector with an **Initial Sector Weight** greater than 40% is capped at 40%. The remaining Sectors have their weights increased proportionally.
3. The process is repeated until no sector has a weight greater than 40%, these are the **Final Sector Weights**.

Second, in each sector, commodities are subject to a cap and floor. This iterative process continues until all commodities within the sector adhere to the specified thresholds.

This step determines the **Final Commodity Sector Weights**

1. The **Sector Cap** is calculated as 12.5% divided by the **Final Sector Weight.** This is capped at 100%.
2. Any commodity within a sector having an **Initial Commodity Sector Weight** less than 5% is floored at 5%.
3. Any commodity within a sector having an **Initial Commodity Sector Weight** greater than **Sector Cap** is capped at the **Sector Cap.**
4. The other commodities within that sector have their **Initial Commodity Sector Weight** adjusted proportionally such that the sum of all Commodity Sector Weights equal 100%.
5. This process is repeated until all **Initial Commodity Sector Weight** within the sector are greater than or equal to 5% and less than or equal to the **Sector Cap**, these are the **Final Commodity Sector Weights**.

Third, **Final Target Weight** for each eligible commodity are calculated as **Final Sector Weight** for the commodities respective Sector multiplied by **Final Commodity Sector Weights**.

Annex 2 – Proposed OY Eligible Contract Schedules

Table 1: Contract Eligibility Schedule Brent Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5	6	7	8
Jan	H	J	K	M	N	Q	U	Z	H*
Feb	J	K	M	N	Q	U	Z	H*	
Mar	K	M	N	Q	U	V	Z	H*	M*
Apr	M	N	Q	U	V	X	Z	H*	M*
May	N	Q	U	V	X	Z	H*	M*	
Jun	Q	U	V	X	Z	F*	H*	M*	U*
Jul	U	V	X	Z	F*	G*	H*	M*	U*
Aug	V	X	Z	F*	G*	H*	M*	U*	
Sep	X	Z	F*	G*	H*	J*	M*	U*	Z*
Oct	Z	F*	G*	H*	J*	K*	M*	U*	Z*
Nov	F*	G*	H*	J*	K*	M*	U*	Z*	
Dec	G*	H*	J*	K*	M*	N*	U*	Z*	H**

** Represents a contract for the next calendar year, for example in January 2024 the last eligible contract is March 2025*

*** Represents a contract for the second next calendar year, for example in December 2024 the last eligible contract is March 2026*

Source: DBIQ

Table 2: Contract Eligibility Schedule for Light Crude, Heating Oil, RBOB Gasoline, Gasoil, Primary Nickel, Lead, Aluminum, Zinc, Copper Optimum Yield Indices

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5	6	7	8
Jan	G	H	J	K	M	N	U	Z	H*
Feb	H	J	K	M	N	Q	U	Z	H*
Mar	J	K	M	N	Q	U	Z	H*	
Apr	K	M	N	Q	U	V	Z	H*	M*
May	M	N	Q	U	V	X	Z	H*	M*
Jun	N	Q	U	V	X	Z	H*	M*	
Jul	Q	U	V	X	Z	F*	H*	M*	U*
Aug	U	V	X	Z	F*	G*	H*	M*	U*
Sep	V	X	Z	F*	G*	H*	M*	U*	
Oct	X	Z	F*	G*	H*	J*	M*	U*	Z*
Nov	Z	F*	G*	H*	J*	K*	M*	U*	Z*
Dec	F*	G*	H*	J*	K*	M*	U*	Z*	

** Represents a contract for the next calendar year, for example in January 2024 the 8th eligible contract is March 2025*

Source: DBIQ

Table 3: Contract Eligibility Schedule for Natural Gas Optimum Yield Indices

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5	6	7	8	9
Jan	G	H	J	K	M	N	V	F*	H*	
Feb	H	J	K	M	N	Q	V	F*	H*	J*
Mar	J	K	M	N	Q	U	V	F*	H*	J*
Apr	K	M	N	Q	U	V	F*	H*	J*	
May	M	N	Q	U	V	X	F*	H*	J*	N*
Jun	N	Q	U	V	X	Z	F*	H*	J*	N*
Jul	Q	U	V	X	Z	F*	H*	J*	N*	
Aug	U	V	X	Z	F*	G*	H*	J*	N*	
Sep	V	X	Z	F*	G*	H*	J*	N*	V*	
Oct	X	Z	F*	G*	H*	J*	N*	V*		
Nov	Z	F*	G*	H*	J*	K*	N*	V*	F**	
Dec	F*	G*	H*	J*	K*	M*	N*	V*	F**	

** Represents a contract for the next calendar year, for example in January 2024 the last eligible contract is March 2025*

*** Represents a contract for the second next calendar year, for example in December 2024 the last eligible contract is January 2026*

Source: DBIQ

Table 4: Contract Eligibility Schedule for Gold Optimum Yield Indices

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5	6
Jan	G	J	M	Q	V	Z	G*
Feb							
Mar	J	M	Q	V	Z	G*	J*
Apr							
May	M	Q	V	Z	G*	J*	M*
Jun							
Jul	Q	V	Z	G*	J*	M*	Q*
Aug							
Sep	V	Z	G*	J*	M*	Q*	V*
Oct							
Nov	Z	G*	J*	M*	Q*	V*	Z*
Dec							

** Represents a contract for the next calendar year, for example in January 2024 the last eligible contract is February 2025*

Source: DBIQ

Table 5: Contract Eligibility Schedule for Silver Optimum Yield Indices

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan						
Feb	H	K	N	U	Z	H*
Mar						
Apr	K	N	U	Z	H*	K*
May						
Jun	N	U	Z	H*	K*	N*
Jul						
Aug	U	Z	H*	K*	N*	U*
Sep						
Oct						
Nov	Z	H*	K*	N*	U*	Z*
Dec						

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*

Source: DBIQ

Table 6: Contract Eligibility Schedule for Minneapolis Wheat, Kansas Wheat, Wheat, Corn, Coffee, Cocoa Optimum Yield Indices

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan						
Feb	H	K	N	U	Z	H*
Mar						
Apr	K	N	U	Z	H*	K*
May						
Jun	N	U	Z	H*	K*	N*
Jul						
Aug	U	Z	H*	K*	N*	U*
Sep						
Oct						
Nov	Z	H*	K*	N*	U*	Z*
Dec						

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*

Source: DBIQ

Table 7: Contract Eligibility Schedule for Cotton Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4
Jan					
Feb	H	K	N	Z	H*
Mar					
Apr	K	N	Z	H*	K*
May					
Jun	N	Z	H*	K*	N*
Jul					
Aug					
Sep					
Oct					
Nov	Z	H*	K*	N*	Z*
Dec					

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*
Source: DBIQ

Table 8: Contract Eligibility Schedule for Soyabean Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan						
Feb	H	K	N	X	F*	H*
Mar						
Apr	K	N	X	F*	H*	K*
May						
Jun	N	X	F*	H*	K*	N*
Jul						
Aug						
Sep						
Oct	X	F*	H*	K*	N*	X*
Nov						
Dec	F*	H*	K*	N*	X*	F**

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*
*** Represents a contract for the second next calendar year, for example in December 2024 the last eligible contract is January 2026*
Source: DBIQ

Table 9: Contract Eligibility Schedule for Soyabean Meal, Soyabean Oil Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan						
Feb	H	K	N	Z	F*	H*
Mar						
Apr	K	N	Z	F*	H*	K*
May						
Jun	N	Z	F*	H*	K*	N*
Jul						
Aug						
Sep						
Oct						
Nov	Z	F*	H*	K*	N*	Z*
Dec	F*	H*	K*	N*	Z*	F**

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*

*** Represents a contract for the second next calendar year, for example in December 2024 the last eligible contract is January 2026*

Source: DBIQ

Table 10: Contract Eligibility Schedule for Sugar Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4
Jan					
Feb	H	K	N	V	H*
Mar					
Apr	K	N	V	H*	K*
May					
Jun	N	V	H*	K*	N*
Jul					
Aug					
Sep	V	H*	K*	N*	V*
Oct					
Nov					
Dec					

** Represents a contract for the next calendar year, for example in February 2024 the last eligible contract is March 2025*

Source: DBIQ

Table 11: Contract Eligibility Schedule for Lean Hogs Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5	6
Jan	G	J	M	N	Q	V	Z
Feb							
Mar	J	M	N	Q	V	Z	G*
Apr							
May	M	N	Q	V	Z	G*	J*
Jun	N	Q	V	Z	G*	J*	M*
Jul	Q	V	Z	G*	J*	M*	N*
Aug							
Sep	V	Z	G*	J*	M*	N*	Q*
Oct							
Nov	Z	G*	J*	M*	N*	Q*	V*
Dec							

** Represents a contract for the next calendar year, for example in March 2024 the last eligible contract is February 2025*

Source: DBIQ

Table 12: Contract Eligibility Schedule for Live Cattle Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan	G	J	M	Q	V	Z
Feb						
Mar	J	M	Q	V	Z	G*
Apr						
May	M	Q	V	Z	G*	J*
Jun						
Jul	Q	V	Z	G*	J*	M*
Aug						
Sep	V	Z	G*	J*	M*	Q*
Oct						
Nov	Z	G*	J*	M*	Q*	V*
Dec						

** Represents a contract for the next calendar year, for example in March 2024 the last eligible contract is February 2025*

Source: DBIQ

Table 13: Contract Eligibility Schedule for Feeder Cattle Optimum Yield Index

Rebalancing Month	Current Contract	Eligible Contracts 1	2	3	4	5
Jan						
Feb	H	J	K	Q	U	V
Mar	J	K	Q	U	V	X
Apr	K	Q	U	V	X	F*
May						
Jun						
Jul	Q	U	V	X	F*	H*
Aug	U	V	X	F*	H*	J*
Sep	V	X	F*	H*	J*	K*
Oct	X	F*	H*	J*	K*	Q*
Nov						
Dec	F*	H*	J*	K*	Q*	U*

** Represents a contract for the next calendar year, for example in April 2024 the last eligible contract is January 2025*

Source: DBIQ

Annex 3 – OYE Selection Future Selection Methodology

Weights of the three futures[2] (Short Term (F0), Medium Term (FM), Long Term (FL)) in the Commodity OYE index are dynamically calculated every month based on close prices of the 1st business day. We determine the implied roll yield from the curve shape on the first business day of the month as well as the confidence that can be assigned to it based on volatility of that contract to the front end.

$$WF_i = \frac{F(SR_i)}{\sum_{i=S,M,L} F(SR_i)_i}$$

Where function F is determined as the normal cumulative distribution function value for the Sharpe Ratio. It is calculated as:

$$F(z) = \int_{-\infty}^{z} \left[\frac{1}{\sqrt{2\pi}}\right] e^{\frac{-z^2}{2}}$$

and SR is the Sharpe ratio calculated for each of the 3 futures as below

$$SR_i = \frac{IR_i}{Vol_i}$$

Where:

"*i*" = S, M, L (Short Term, Medium Term, Long Term Futures)

"IR_i" is the Implied Roll Yield of the "i" Future as calculated below

"Vol_i" is the Volatility of the "i" Future as calculated below

Implied Roll Yield Calculation:

$$IR_i = \left(\frac{PS_i}{PT_i}\right)^{\left(\frac{365}{daycount}\right)} - 1$$

Where:

"i" = S, M, L (Short Term, Medium Term, Long Term Futures)

"PS_i" is the Closing Level of the Spot Contract for the "i" Futures on the 1st business day

"PT_i" is the Closing Level of the Target Contract for the "i" Futures on the 1st business day

"daycount" is the number of calendar days between the expiry dates of the Spot Contract and the Target Contract in each case for the "i" Future

[2] Lean Hog, Live Cattle and Feeder Cattle indices only allocate to short and medium term futures.

Volatility Calculation:

$$Vol_i = \sqrt{\frac{252}{N-1} * \sum_{i=1}^{N} \left(RD(i,j) - \overline{RD(i)}\right)^2}$$

$$RD(i,j) = \left(\frac{PS_i(j)}{PS_i(j-1)}\right) - \left(\frac{PT_i(j)}{PT_i(j-1)}\right)$$

Where:

"i" = S, M, L (Short Term, Medium Term, Long Term Futures of the relevant DBLCI OYE Index)

"$RD(i,j)$" is the Return Differential between the Spot and Target Contract for the "i" Future on the "j th" Index Business Day

"$PS_i(j)$" is the Closing Level of the Spot Contract for the "i" Future on the "j th" Index Business Day

"$PT_i(j)$" is the Closing Level of the Target Contract for the "i" Future on the "j th" Index Business Day

The Return Differential "RD" is calculated for the 61 business days prior to rebalancing

"j" is a number between 1 and 61 inclusive

"Spot Contract" is the existing contract in the Short Term Future on the 1st business day.

"Target Contract" is the contract the Future "i rolls into, if "i"= M, L. Where "i" is the Short Term Future, the Target Contract is the contract the Future rolls into only if this contract is not the same as the Spot Contract. Else the Target Contract is the contract as indicated by the Proxy Future (F1) roll in the Schedule.

Commodity OYE Contracts for each commodity

Relevant contracts:

Table 1: Contract Schedule for Sugar OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	V	V	V	H*	H*	H*	H*
F1 Future	K	N	N	V	V	H*	H*	H*	K*	K*	K*	K*
FM Component Future	V	V	V	V	V	H*	H*	H*	V*	V*	V*	V*
FL Component Future	H*	H*	H*	H*	H*	V*	V*	V*	H**	H**	H**	H**

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 2: Contract Schedule for Corn, Bean Oil, Coffee, Silver, Wheat, Kansas Wheat OYE Indices

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	U	U	Z	Z	Z	H*	H*
F1 Future	K	N	N	U	U	Z	Z	H*	H*	H*	K*	K*
FM Component Future	N	N	N	Z	Z	Z	Z	N*	N*	N*	N*	N*
FL Component Future	Z	Z	Z	N*	N*	N*	N*	Z*	Z*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 3: Contract Schedule for Soybean OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	X	X	X	X	F*	F*	H*
F1 Future	K	N	N	U	U	F*	F*	F*	F*	H*	H*	K*
FM Component Future	N	N	N	X	X	N*	N*	N*	N*	N*	N*	N*
FL Component Future	X	X	X	N*	N*	X*	X*	X*	X*	X*	X*	X*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 4: Contract Schedule for Cocoa OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	Z	Z	Z	Z	Z	H*	H*
F1 Future	K	N	N	Z	Z	H*	H*	H*	H*	H*	K*	K*
FM Component Future	Z	Z	Z	Z	Z	H*	H*	H*	H*	H*	Z*	Z*
FL Component Future	H*	H*	H*	H*	H*	Z*	Z*	Z*	Z*	Z*	H**	H**

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 5: Contract Schedule for WTI, RBOB Gasoline, Heating Oil, Gas Oil, Aluminium, Copper, Lead, Nickel, Zinc OYE Indices

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	J	K	M	N	Q	U	V	X	Z	F*	G*
F1 Future	J	K	M	N	Q	U	V	X	Z	F*	G*	H*
FM Component Future	M	M	M	Z	Z	Z	Z	Z	Z	M*	M*	M*
FL Component Future	Z	Z	Z	M*	M*	M*	M*	M*	M*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 6: Contract Schedule for Natural Gas OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	J	K	M	N	Q	U	V	X	Z	F*	G*
F1 Future	J	K	M	N	Q	U	V	X	Z	F*	G*	H*
FM Component Future	N	N	N	N	F*	F*	F*	F*	F*	F*	N*	N*
FL Component Future	F*	F*	F*	F*	N*	N*	N*	N*	N*	N*	F**	F**

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 7: Contract Schedule for Gold OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	J	J	M	M	Q	Q	Z	Z	Z	Z	G*	G*
F1 Future	M	M	Q	Q	Z	Z	G*	G*	G*	G*	J*	J*
FM Component Future	M	M	Z	Z	Z	Z	M*	M*	M*	M*	M*	M*
FL Component Future	Z	Z	M*	M*	M*	M*	Z*	Z*	Z*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 8: Contract Schedule for Cotton OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	Z	Z	Z	Z	Z	H*	H*
F1 Future	K	N	N	Z	Z	H*	H*	H*	H*	H*	K*	K*
FM Component Future	N	N	N	Z	Z	N*	N*	N*	N*	N*	N*	N*
FL Component Future	Z	Z	Z	N*	N*	Z*	Z*	Z*	Z*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 9: Contract Schedule for Brent OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	J	K	M	N	Q	U	V	X	Z	F*	G*	H*
F1 Future	K	M	N	Q	U	V	X	Z	F*	G*	H*	J*
FM Component Future	M	M	Z	Z	Z	Z	Z	Z	M*	M*	M*	M*
FL Component Future	Z	Z	M*	M*	M*	M*	M*	M*	Z*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 10: Contract Schedule for Soybean Meal OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	K	K	N	N	Z	Z	Z	Z	F*	F*	H*
F1 Future	K	N	N	Z	Z	F*	F*	F*	F*	H*	H*	K*
FM Component Future	N	N	N	Z	Z	N*	N*	N*	N*	N*	N*	N*
FL Component Future	Z	Z	Z	N*	N*	Z*	Z*	Z*	Z*	Z*	Z*	Z*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 11: Contract Schedule for Live Cattle OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	J	J	M	M	Q	Q	V	V	Z	Z	G*	G*
F1 Future	M	M	Q	Q	V	V	Z	Z	G*	G*	J*	J*
FM Component Future	Q	Q	Q	Q	G*	G*	G*	G*	Q*	Q*	Q*	Q*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 12: Contract Schedule for Lean Hog OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	J	J	M	M	N	Q	V	V	Z	Z	G*	G*
F1 Future	M	M	N	Q	V	V	Z	Z	G*	G*	J*	J*
FM Component Future	Q	Q	Q	Q	Q	G*	G*	G*	Q*	Q*	Q*	Q*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*

Table 13: Contract Schedule for Feeder Cattle OYE Index

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F0 Component Future	H	H	J	K	Q	Q	Q	U	V	X	F*	F*
F1 Future	J	K	Q	Q	U	U	V	X	F*	F*	H*	H*
FM Component Future	Q	V	V	V	F*	F*	F*	J*	J*	J*	J*	Q*

** Represents a contract for the next calendar year, for example in 2024 this is the future expiring in 2025*

*** Represents a contract for the next but one calendar year, for example in 2024 this is the future expiring in 2026*