

Review of 2023 S&P GSCI Rebalancing

S&P GSCI ADVISORY PANEL MEETING

Pro Forma 2023 S&P GSCI Rebalance

Final results will be published in November 2022

Kwai Tsui
Senior Index Manager
Commodity Index Group

October 13, 2022

**S&P Dow Jones
Indices**

A Division of **S&P Global**

Copyright © 2022 by S&P Global. All rights reserved

Table Of Contents

1.	<i>Overview</i>	3
2.	<i>World Production Quantity Sources</i>	4
3.	<i>World Production Issues & Resolutions</i>	5
4.	<i>World Production Issues & Resolutions (Cont.)</i>	6
5.	<i>World Production Averages (WPA)</i>	7
6.	<i>WPA Comparison Table (2018 – 2023)</i>	8
7.	<i>Investment Support Level (ISL)</i>	9
8.	<i>ISL Commentary</i>	10
9.	<i>2023 S&P GSCI CPW Calculation – Pro Forma</i>	11
9.	<i>2023 S&P GSCI CPW Comparison</i>	12
10.	<i>2023 ACRP Comparison</i>	13
11.	<i>Yearly Volume Comparison</i>	14
12.	<i>2023 Dollar Weight Comparison – Pro Forma</i>	15
13.	<i>2023 Sector Weight Comparison – Pro Forma</i>	16
14.	<i>Component Candidate Screening Review</i>	17

Overview

- No membership changes
- Investment Support Level: **US\$ 310 billion**
- Large increase to Energy sector; decreases across all other sectors
- Largest percent weight increases: **Brent Crude Oil, WTI Crude Oil and Natural Gas**
- Largest weight percent decreases: **Gold, Copper and Soybeans**
- **WTI Crude Oil** will continue to hold the largest weight
- Largest World Production Average increase: **Natural Gas (4.7%)**
- Largest percentage volume increase: **Cocoa (20.71%)**
- Largest percentage volume decrease: **Silver (-24.83%)**

World Production Quantity Sources

- **Crude Oil** and **Natural Gas** production data provided by International Energy Agency (IEA) for 2017-2019
- **Copper** and **Nickel** 2019 production data provided by International Copper/Nickel Study Group
- No additional changes to reported sources for 2023

WORLD PRODUCTION QUANTITY SOURCES	
Commodity	Source
Wheat	FAOSTATS
Corn	FAOSTATS
Soybeans	FAOSTATS
Lean Hogs	FAOSTATS and UN Data
Cattle	FAOSTATS and UN Data
Coffee	FAOSTATS
Sugar	U.S. Department of Agriculture (USDA)
Cocoa	FAOSTATS
Cotton	U.S. Department of Agriculture (USDA)
Gold	U.S. Geological Survey (USGS)
Silver	U.S. Geological Survey (USGS)
Crude Oil	UN Data and IEA
Natural Gas	UN Data and IEA
Aluminum	U.S. Geological Survey (USGS)
Copper	U.S. Geological Survey (USGS) and International Copper Study Group (ICSG)
Lead	U.S. Geological Survey (USGS)
Nickel	U.S. Geological Survey (USGS) and International Nickel Study Group (INSG)
Zinc	U.S. Geological Survey (USGS)

World Production Issues & Resolutions

WTI Crude Oil and Natural Gas

Issue

- The UN Data 2017-2019 World Production data will not be made available

Resolution

- Utilized 2017, 2018 and 2019 Production data from the International Energy Agency (IEA)
- We will use International Energy Agency (IEA) as the new data source going forward
- International Energy Agency (IEA) incorporated year-by-year

World Production Issues & Resolutions (Cont.)

Copper and Nickel

Issue

- U.S. Geological Survey (USGS) 2019 World Production data will not be made available

Resolution

- Utilized 2019 Copper Production data from the International Copper Study Group (ICSG)
- Utilized 2019 Nickel Production data from the International Nickel Study Group (INSG)
- We will compare the 2019 Production data from ICSG and INSG to the USGS data once made available

World Production Averages (WPA)

WORLD PRODUCTION AVERAGE COMPARISONS				
Commodity	WPQ Units	2022 WPA	2023 WPA	Percentage Change
Wheat	M ton	744,992,805	751,938,281	0.9%
Corn	M ton	1,096,590,952	1,116,902,063	1.9%
Soybeans	M ton	333,936,604	339,964,995	1.8%
Lean Hogs	1000 M ton	42,882,833	43,826,446	2.2%
Cattle	M ton	63,586,878	64,585,598	1.6%
Coffee	M ton	9,376,819	9,583,155	2.2%
Sugar	M ton	176,971,200	177,615,400	0.4%
Cocoa	M ton	5,013,083	5,170,340	3.1%
Cotton	M ton	24,585,384	24,644,954	0.2%
Gold	1 Kg	3,184,000	3,226,000	1.3%
Silver	1 M ton	27,600	27,340	-0.9%
Crude Oil	1000 M ton	3,866,576,722	3,898,368,579	0.8%
Natural Gas	1 Petajoule	39,758	41,624	4.7%
Aluminum	1000 M ton	65,892,000	67,890,000	3.0%
Copper	1000 M ton	23,580,000	23,840,000	1.1%
Lead	1000 M ton	11,020,000	11,220,000	1.8%
Nickel	1 M ton	2,016,000	2,093,800	3.9%
Zinc	1000 M ton	13,440,000	13,520,000	0.6%

WPA Comparison Table (2018 – 2023)

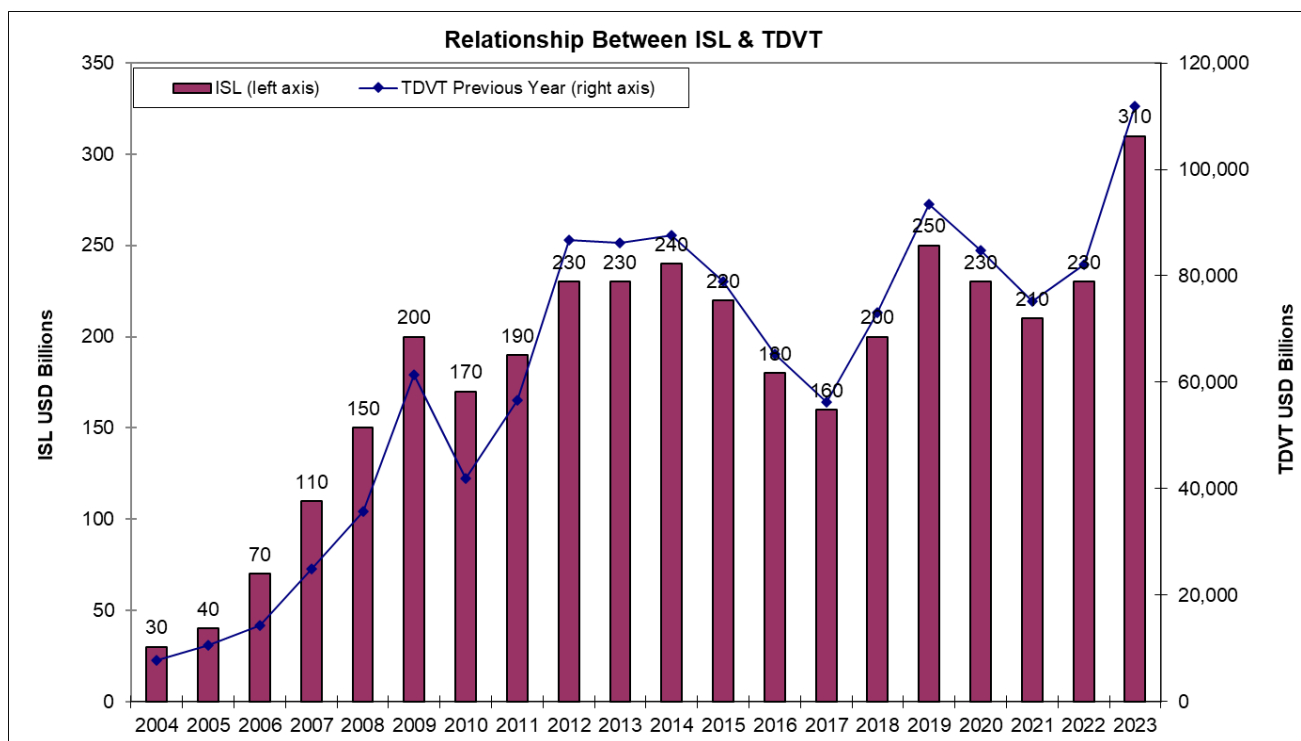
WORLD PRODUCTION AVERAGE COMPARISON TABLE

Commodity	Unit	2018	2019	2020	2021	2022	2023
Wheat	1000 M ton	690,423,419	710,379,591 2.9%	722,164,585 1.7%	740,527,832 2.5%	744,992,805 0.6%	751,938,281 0.9%
Corn	1000 M ton	932,688,170	964,917,628 3.5%	1,016,567,342 5.4%	1,079,790,527 6.2%	1,096,590,952 1.6%	1,116,902,063 1.9%
Soybeans	1000 M ton	270,502,922	281,947,576 4.2%	296,726,183 5.2%	319,193,687 7.6%	333,936,604 4.6%	339,964,995 1.8%
Lean Hogs	1000 M ton	40,600,373	41,004,075 1.0%	41,552,392 1.3%	42,099,187 1.3%	42,882,833 1.9%	43,826,446 2.2%
Cattle	1000 M ton	54,796,100	56,877,204 3.8%	60,238,537 5.9%	61,910,132 2.8%	63,586,878 2.7%	64,585,598 1.6%
Coffee	1000 M ton	8,677,280	8,756,024 0.9%	8,941,803 2.1%	9,007,432 0.7%	9,376,819 4.1%	9,583,155 2.2%
Sugar	1000 M ton	168,296,600	173,191,200 2.9%	173,720,600 0.3%	174,081,600 0.2%	176,971,200 1.7%	177,615,400 0.4%
Cocoa	1000 M ton	4,499,853	4,515,547 0.3%	4,651,853 3.0%	4,808,290 3.4%	5,013,083 4.3%	5,170,340 3.1%
Cotton	1000 M ton	26,509,414	25,568,018 -3.6%	24,660,238 -3.6%	24,662,720 0.0%	24,585,384 -0.3%	24,644,954 0.2%
Gold	1 Kg	2,790,000	2,894,000 3.7%	2,984,000 3.1%	3,108,000 4.2%	3,184,000 2.4%	3,226,000 1.3%
Silver	1 M ton	24,700	25,680 4.0%	26,220 2.1%	26,600 1.4%	27,600 3.8%	27,340 -0.9%
Crude Oil	1000 M ton	3,661,383,369	3,718,068,764 1.5%	3,779,857,044 1.7%	3,817,246,522 1.0%	3,866,576,722 1.3%	3,898,368,579 0.8%
Natural Gas	1 Petajoule	35,300	36,612 3.7%	37,478 2.4%	38,268 2.1%	39,758 3.9%	41,624 4.7%
Aluminum	1000 M ton	52,096,000	58,178,000 11.7%	61,248,000 5.3%	63,580,000 3.8%	65,892,000 3.6%	67,890,000 3.0%
Copper	1000 M ton	20,440,000	21,300,000 4.2%	22,073,200 3.6%	22,764,800 3.1%	23,580,000 3.6%	23,840,000 1.1%
Lead	1000 M ton	10,322,000	10,480,000 1.5%	10,549,000 0.7%	10,849,600 2.8%	11,020,000 1.6%	11,220,000 1.8%
Nickel	1 M ton	1,784,000	1,870,000 4.8%	1,944,000 4.0%	1,996,000 2.7%	2,016,000 1.0%	2,093,800 3.9%
Zinc	1000 M ton	12,860,000	13,220,000 2.8%	13,340,000 0.9%	13,600,000 1.9%	13,440,000 -1.2%	13,520,000 0.6%

Investment Support Level (ISL)

- **Purpose of ISL:**

- Estimate for liquidity
- Trigger for CPWChanges
- Not an accurate estimate of commodity investment space



ISL Commentary

- ISL recommendation level: **US\$ 310 billion**
- **34.78% increase** from recommended level of **US\$ 230 billion** for 2022

ISL DETERMINATION CALCULATION MODEL

Year	ISL	% Change In ISL	TDVT	% Change In TDVT	% Change In TDVT Captured By ISL Change
2004	30	0.00%	7828.4	33.82%	0.00%
2005	40	33.33%	10582.1	35.18%	94.76%
2006	70	75.00%	14301.3	35.15%	213.39%
2007	110	57.14%	24964	74.56%	76.64%
2008	150	36.36%	35670.6	42.89%	84.79%
2009	200	33.33%	61399.1	72.13%	46.21%
2010	170	-15.00%	41984.7	-31.62%	47.44%
2011	190	11.76%	56608.4	34.83%	33.78%
2012	230	21.05%	86698.5	53.15%	39.61%
2013	230	0.00%	86253.4	-0.51%	0.00%
2014	240	4.35%	87565.9	1.52%	285.73%
2015	220	-8.33%	78917.0	-9.88%	84.37%
2016	180	-18.18%	65320.9	-17.23%	105.53%
2017	160	-11.11%	56214.9	-13.94%	79.70%
2018	200	25.00%	73173.6	30.17%	82.87%
2019	250	25.00%	93533.4	27.82%	89.85%
2020	230	-8.00%	84814.5	-9.32%	85.82%
2021	210	-8.70%	75288.6	-11.23%	77.42%
2022	230	9.52%	82045.7	8.97%	106.12%
2023	310	34.78%	111800.3	36.27%	95.91%

ISL AVERAGE CALCULATION

Average Excluding Current Year	86.00%
Average With Current Year	86.50%

2023 S&P GSCI CPW Calculation – Pro Forma

- All data subject to revisions based on revised data from designated sources
- Official 2023 S&P GSCI CPW announcement – **November 2022**

2023 S&P GSCI CONTRACT PRODUCTION WEIGHT CALCULATION - PRO FORMA

Symbol	Component	Commodity	CF	Contract Size	Lot Size	ISL	WPA	Volume	TQT	% TQT	CPW	ACRP	TDW	RPDW	TDVT (bill)	TVM
W	Wheat	Chicago Wheat	36.7437	5000	100	310	751,938,281	26,360,640	3,587,096,563	0.697229271	19263.74	8.686666667	167337.6881	3.31%	1144.9	111.7
KW	Wheat	Kansas Wheat	36.7437	5000	100	310	751,938,281	11,447,067	1,557,691,114	0.302770729	8365.251	9.096041667	76090.6716	1.50%	520.6	111.7
C	Corn	Corn	39.3683	5000	100	310	1,116,902,063	79,291,279	10,070,447,416	1	43970.54	6.511458333	286312.3391	5.66%	2581.5	147.2
S	Soybeans	Soybeans	36.7437	5000	100	310	339,964,995	50,787,076	6,910,991,000	1	12491.57	14.60375	182423.7654	3.60%	3708.4	331.9
KC	Coffee	Coffee	2204.623	37500	100	310	9,583,155	10,771,144	183,214,046	1	21127.24	2.238875	47301.2495	0.93%	904.3	312.1
SB	Sugar	Sugar	2204.623	112000	100	310	177,615,400	30,892,952	1,569,434,150	1	391575.0	0.187483333	73413.7863	1.45%	648.7	144.2
CC	Cocoa	Cocoa	1	10	1	310	5,170,340	12,458,531	124,585,310	1	5.170340	2492.333333	12886.2107	0.25%	310.5	393.4
CT	Cotton	Cotton	2204.623	50000	100	310	24,644,954	8,416,885	190,891,708	1	54332.83	1.179533333	64087.3841	1.27%	496.4	126.4
LH	Lean Hogs	Lean Hogs	2204.623	40000	100	310	43,826,446	11,277,750	204,620,019	1	96620.79	0.956645833	92431.8762	1.83%	431.6	76.2
LC	Cattle	Live Cattle	2204.623	40000	100	310	64,585,598	14,145,607	256,653,532	0.776988313	110633.0	1.363395833	150836.5712	2.98%	771.4	83.5
FC	Cattle	Feeder Cattle	2204.623	50000	100	310	64,585,598	3,248,065	73,664,862	0.223011687	31753.94	1.672854167	53119.7108	1.05%	271.7	83.5
CL	Crude Oil	WTI Crude Oil	7.33	1000	1	310	3,898,368,579	276,138,308	37,672,347,613	0.422716753	12079.15	91.4525	1104668.4654	21.83%	25253.5	373.2
HO	Crude Oil	Heating Oil	315	42000	1	310	3,898,368,579	41,072,054	5,476,273,867	0.061448592	75458.02	3.100816667	233981.4860	4.62%	5349	373.2
RB	Crude Oil	RBOB Gasoline	354.9	42000	1	310	3,898,368,579	44,934,017	5,317,635,148	0.059668526	82553.26	2.817091667	232560.1008	4.60%	5316.5	373.2
LCO	Crude Oil	Brent Crude Oil	7.33	1000	1	310	3,898,368,579	244,465,728	33,351,395,362	0.374231882	10693.69	94.36333333	1009092.2340	19.94%	23068.6	373.2
LGO	Crude Oil	Gas Oil	1	100	1	310	3,898,368,579	73,019,472	7,301,947,200	0.081934246	319.4099	912.6041667	291494.8056	5.76%	6663.8	373.2
NG	Natural Gas	Natural Gas	947086.289	10000	1	310	41,624	121,684,838	1,284,834	1	39421.14	6.056416667	238750.8493	4.72%	7369.7	503.9
MAL	Aluminum	Aluminum	1	25	1	310	67,890,000	55,050,458	1,376,261,450	1	67.89000	2835.175	192480.0308	3.80%	3901.9	330.9
MCU	Copper	Copper	1	25	1	310	23,840,000	28,650,419	716,260,475	1	23.84000	9230.270833	220049.6567	4.35%	6611.3	490.5
MNI	Nickel	Nickel	1	6	1	310	2,093,800	14,970,108	89,820,648	1	2.093800	23762.83333	49754.6204	0.98%	2134.4	700.3
MPB	Lead	Lead	1	25	1	310	11,220,000	10,270,597	256,764,925	1	11.22000	2211.320833	24811.0198	0.49%	567.8	373.6
MZN	Zinc	Zinc	1	25	1	310	13,520,000	22,746,030	568,650,750	1	13.52000	3560.584167	48139.0979	0.95%	2024.7	686.6
GC	Gold	Gold	32.15075	100	1	310	3,226,000	54,308,012	168,916,781	1	103.7183	1822.708333	189048.2097	3.74%	9898.8	854.8
SI	Silver	Silver	32150.75	5000	1	310	27,340	16,615,349	2,583,975	1	879.0015	22.27158333	19576.7552	0.39%	1850.3	1542.9

2023 S&P GSCI CPW Comparison

2023 S&P GSCI CPW COMPARISON				
Symbol	Commodity	2022 CPW	2023 CPW	% Change
W	Chicago Wheat	19458.43	19263.74	-1.00%
KW	Kansas Wheat	7915.366	8365.251	5.68%
C	Corn	43170.92	43970.54	1.85%
S	Soybeans	12270.07	12491.57	1.81%
KC	Coffee	20672.35	21127.24	2.20%
SB	Sugar	390154.8	391575.0	0.36%
CC	Cocoa	5.013083	5.170340	3.14%
CT	Cotton	54201.50	54332.83	0.24%
LH	Lean Hogs	94540.48	96620.79	2.20%
LC	Live Cattle	110644.1	110633.0	-0.01%
FC	Feeder Cattle	29541.00	31753.94	7.49%
CL	WTI Crude Oil	12392.85	12079.15	-2.53%
HO	Heating Oil	70902.91	75458.02	6.42%
RB	RBOB Gasoline	85545.41	82553.26	-3.50%
LCO	Brent Crude Oil	10024.82	10693.69	6.67%
LGO	Gas Oil	342.1020	319.4099	-6.63%
NG	Natural Gas	37653.94	39421.14	4.69%
MAL	Aluminum	65.89200	67.89000	3.03%
MCU	Copper	23.58000	23.84000	1.10%
MNI	Nickel	2.016000	2.093800	3.86%
MPB	Lead	11.02000	11.22000	1.81%
MZN	Zinc	13.44000	13.52000	0.60%
GC	Gold	102.3680	103.7183	1.32%
SI	Silver	887.3607	879.0015	-0.94%

2023 ACRP Comparison

- Price increases for all commodities except for Silver
- Cocoa and Gold prices were flat
- Energy prices had the largest percent changes

2023 ACRP COMPARISON				
Symbol	Commodity	2022 ACRP	2023 ACRP	% Change
W	Chicago Wheat	653.9166667	868.6666667	32.84%
KW	Kansas Wheat	617.5	909.6041667	47.30%
C	Corn	529.7291667	651.1458333	22.92%
S	Soybeans	1322.979167	1460.375	10.39%
KC	Coffee	140.8208333	223.8875	58.99%
SB	Sugar	16.24166667	18.74833333	15.43%
CC	Cocoa	2479.416667	2492.333333	0.52%
CT	Cotton	81.02916667	117.9533333	45.57%
LH	Hogs	87.14791667	95.66458333	9.77%
LC	Live Cattle	118.775	136.3395833	14.79%
FC	Feeder Cattle	147.4520833	167.2854167	13.45%
CL	WTI Crude Oil	57.37916667	91.4525	59.38%
HO	Heating Oil	1.726633333	3.100816667	79.59%
RB	RBOB Gasoline	1.771666667	2.817091667	59.01%
LCO	Brent Crude Oil	59.93833333	94.36333333	57.43%
LGO	Gas Oil	488.5625	912.6041667	86.79%
NG	Natural Gas	3.091916667	6.056416667	95.88%
MAL	Aluminum	2219.303333	2835.175	27.75%
MCU	Copper	8596.875	9230.270833	7.37%
MNI	Nickel	17299.6875	23762.83333	37.36%
MPB	Lead	2083.041667	2211.320833	6.16%
MZN	Zinc	2799.5025	3560.584167	27.19%
GC	Gold	1818.833333	1822.708333	0.21%
SI	Silver	25.30541667	22.27158333	-11.99%

Yearly Volume Comparison

- Volume increase for six commodities
- Cocoa with largest increase of 20.71%
- Volume decrease for other 18 commodities
- Largest decreases: Silver and Chicago Wheat

2023 YEARLY VOLUME COMPARISON

Symbol	Commodity	2022 Volume	2023 Volume	% Change
W	Chicago Wheat	32,278,726	26,360,640	-18.33%
KW	Kansas Wheat	13,130,452	11,447,067	-12.82%
C	Corn	92,675,550	79,291,279	-14.44%
S	Soybeans	60,634,382	50,787,076	-16.24%
KC	Coffee	12,073,152	10,771,144	-10.78%
SB	Sugar	32,245,359	30,892,952	-4.19%
CC	Cocoa	10,320,791	12,458,531	20.71%
CT	Cotton	8,139,651	8,416,885	3.41%
LH	Lean Hogs	11,487,774	11,277,750	-1.83%
LC	Live Cattle	14,146,672	14,145,607	-0.01%
FC	Feeder Cattle	3,021,630	3,248,065	7.49%
CL	WTI Crude Oil	281,180,743	276,138,308	-1.79%
HO	Heating Oil	38,302,673	41,072,054	7.23%
RB	RBOB Gasoline	46,212,745	44,934,017	-2.77%
LCO	Brent Crude Oil	227,452,583	244,465,728	7.48%
LGO	Gas Oil	77,619,341	73,019,472	-5.93%
NG	Natural Gas	124,406,722	121,684,838	-2.19%
MAL	Aluminum	55,580,268	55,050,458	-0.95%
MCU	Copper	30,330,404	28,650,419	-5.54%
MNI	Nickel	16,118,987	14,970,108	-7.13%
MPB	Lead	10,295,481	10,270,597	-0.24%
MZN	Zinc	20,647,686	22,746,030	10.16%
GC	Gold	62,339,274	54,308,012	-12.88%
SI	Silver	22,103,439	16,615,349	-24.83%

Total Volume	1,302,744,485	1,263,022,386	-3.05%
--------------	---------------	---------------	--------

2023 Dollar Weight Comparison – Pro Forma

2023 COMMODITY DOLLAR WEIGHT COMPARISON - PRO FORMA

Symbol	Commodity	2022 CPW	2023 CPW	2023 ACRP	2022 TDW	2023 TDW	2022 RPDW	2023 RPDW	Difference (basis pts)
W	Chicago Wheat	19458.43	19263.74	8.686666667	127241.9168	167337.6881	3.64%	3.31%	-33
KW	Kansas Wheat	7915.366	8365.251	9.096041667	48877.38505	76090.67165	1.40%	1.50%	11
C	Corn	43170.92	43970.54	6.511458333	228688.9548	286312.3391	6.54%	5.66%	-88
S	Soybeans	12270.07	12491.57	14.60375	162330.4698	182423.7654	4.64%	3.60%	-104
KC	Coffee	20672.35	21127.24	2.238875	29110.97554	47301.24946	0.83%	0.93%	10
SB	Sugar	390154.8	391575.0	0.187483333	63367.6421	73413.78625	1.81%	1.45%	-36
CC	Cocoa	5.013083	5.170340	2492.333333	12429.52154	12886.21073	0.36%	0.25%	-10
CT	Cotton	54201.50	54332.83	1.179533333	43919.02377	64087.38408	1.26%	1.27%	1
LH	Lean Hogs	94540.48	96620.79	0.956645833	82390.05873	92431.87617	2.36%	1.83%	-53
LC	Live Cattle	110644.1	110633.0	1.363395833	131417.5298	150836.5712	3.76%	2.98%	-78
FC	Feeder Cattle	29541.00	31753.94	1.672854167	43558.81994	53119.71084	1.25%	1.05%	-20
CL	WTI Crude Oil	12392.85	12079.15	91.4525	711091.4056	1104668.465	20.34%	21.83%	149
HO	Heating Oil	70902.91	75458.02	3.100816667	122423.3278	233981.486	3.50%	4.62%	112
RB	RBOB Gasoline	85545.41	82553.26	2.817091667	151557.9514	232560.1008	4.34%	4.60%	26
LCO	Brent Crude Oil	10024.82	10693.69	94.36333333	600871.0028	1009092.234	17.19%	19.94%	275
LGO	Gas Oil	342.1020	319.4099	912.6041667	167138.2084	291494.8056	4.78%	5.76%	98
NG	Natural Gas	37653.94	39421.14	6.056416667	116422.8447	238750.8493	3.33%	4.72%	139
MAL	Aluminum	65.89200	67.89000	2835.175	146234.3352	192480.0308	4.18%	3.80%	-38
MCU	Copper	23.58000	23.84000	9230.270833	202714.3125	220049.6567	5.80%	4.35%	-145
MNI	Nickel	2.016000	2.093800	23762.83333	34876.17	49754.62043	1.00%	0.98%	-1
MPB	Lead	11.02000	11.22000	2211.320833	22955.11917	24811.01975	0.66%	0.49%	-17
MZN	Zinc	13.44000	13.52000	3560.584167	37625.3136	48139.09793	1.08%	0.95%	-13
GC	Gold	102.3680	103.7183	1822.708333	186190.3307	189048.2097	5.33%	3.74%	-159
SI	Silver	887.3607	879.0015	22.27158333	22455.03225	19576.75516	0.64%	0.39%	-26

2023 Sector Weight Comparison – Pro Forma

S&P GSCI SECTOR WEIGHTS			
Sector	2022 Weight	2023 Weight	Difference (basis pts)
Energy	53.48%	61.47%	799
Agriculture	20.48%	17.98%	-250
Livestock	7.36%	5.86%	-151
Industrial Metals	12.71%	10.58%	-214
Precious Metals	5.97%	4.12%	-185

- Largest sector percentage increase: **Energy**
 - Attributed to percentage weight increases in **Brent Crude Oil** and **WTI Crude Oil**
- Largest percentage decrease: **Agriculture**
 - Attributed to percentage weight decrease in **Soybeans** and **Corn**

Component Candidate Screening Review

CONTRACTS TESTED FOR INCLUSION

Soybean Oil	ICE Heating Oil
Soybean Meal	Brent Oil
Hard Red Spring Wheat	Gold (Moscow Exchange)
Brent Crude Oil Last Day Financial (BZ)	Refined Silver (Moscow Exchange)
Copper (HG)	Robusta Coffee - 10 Tonne
Natural Gas (Henry Hub) Last-day Financial (HH)	White Sugar
E-mini Crude Oil (QM)	Class III Milk
Natural Gas (Henry Hub) Penultimate Financial (HP)	Platinum (PL)
Mont Belvieu LDH Propane (OPIS) Futures (B0)	Chicago Ethanol (Platts) (CU)
E-Micro Gold Futures (MGC)	Palladium Futures (PA)
Mont Belvieu Normal Butane (OPIS) Futures (D0)	Coal (API2) CIF ARA (ARGUS-McCloskey) (MTF)
1,000-oz. Silver Futures (SIL)	Tin (SN)
ICE WTI Crude	Soybean Meal
ICE NYH (RBOB) Gasoline (Monthly)	Copper (HG)

Component Candidate Screening Review (Cont.)

Eligibility Criteria for inclusion:

- RPDW – at least 1% for a contract that is not included in S&P GSCI
- TDVT – minimum **US\$ 15 billion** for contracts not represented in S&P GSCI
minimum **US\$ 30 billion** for components not represented in S&P GSCI
- TQT – minimum **25%** for components not represented in S&P GSCI
- TVM Lower Level – 30 for Contracts not represented in S&P GSCI
- TVM Upper Level – 200 for components not represented in S&P GSCI

General Disclaimer

Copyright © 2022 S&P Dow Jones Indices LLC. All rights reserved. STANDARD & POOR'S, S&P, S&P 500, S&P 500 LOW VOLATILITY INDEX, S&P 100, S&P COMPOSITE 1500, S&P MIDCAP 400, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, S&P TARGET DATE INDICES, GICS, SPIVA, SPDR and INDEXOLOGY are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"). DOW JONES, DJ, DJIA and DOW JONES INDUSTRIAL AVERAGE are registered trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P, Dow Jones or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other investment product or vehicle. S&P Dow Jones Indices LLC is not a tax advisor. A tax advisor should be consulted to evaluate the impact of any tax-exempt securities on portfolios and the tax consequences of making any particular investment decision. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

Performance Disclosure

The S&P GSCI was launched May 7, 2007. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spdji.com. Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).