

Factsheet

Goldman Sachs Mariner Index

INDEX INFORMATION

Ticker	GSMARINR
RIC	.GSMARINR
Index Sponsor	Goldman Sachs International
Currency	USD
Number of Underliers (excluding cash position)	max. 11
Volatility Target	5.00%
Leverage Cap	100%
Excess Returns	Calculated over the sum of (i) a notional cash deposit at the Federal Funds Rate, compounded daily, and (ii) 0.50% per annum, accruing daily
Deduction Rate	0.50% per annum
Index Calculator	Solactive AG
Index Launch Date	August 07, 2020

INDEX OVERVIEW

- The Goldman Sachs Mariner Index ("GSMARINR"):
- o The Goldman Sachs Mariner Index ("GS Mariner Index") is sponsored by Goldman Sachs International. The index was launched on August 7, 2020.
 - o The GS Mariner Index provides exposure to two asset classes:
 - o U.S. Equities, through a basket of nine (9) ETFs comprised of stocks in various U.S. sectors, and
 - o U.S. Government Bonds, through two (2) futures contract positions on 10-Year and 2- Year U.S. Treasury notes.
 - o The GS Mariner Index uses a rules-based strategy that
 - o seeks a low-volatility basket of U.S. Equity assets ("Equity Basket") on a monthly basis, subject to weight constraints;
 - o employs a fixed income momentum signal to select the target U.S. Government Bond asset daily between the two futures contract positions on 10-Year and 2- Year U.S. Treasury notes; and
 - o allocates between the Equity Basket and the target U.S. Government Bond asset daily, subject to a volatility target of 5%, a maximum leverage cap of 100%, minimum and maximum weights, and weight smoothing.
 - o The GS Mariner Index is calculated on an excess return basis over the sum of (i) a notional cash deposit at the Federal Funds Rate, compounded daily, and (ii) 0.50% per annum deduction rate, accruing daily.

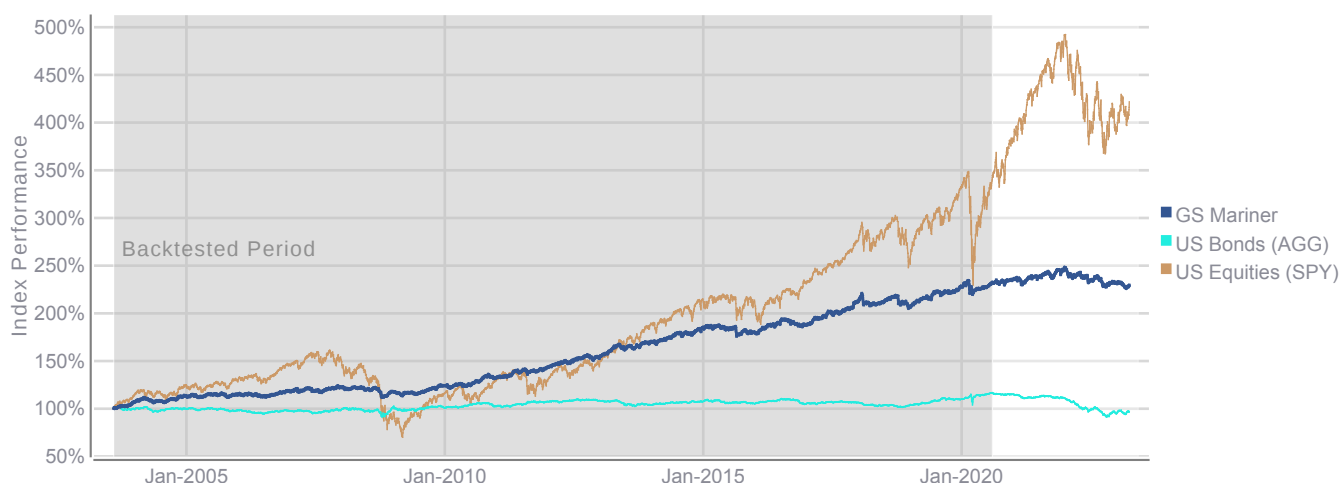
REBALANCING PROCESS

- Step 1: For U.S. Equities, every month on the rebalancing date, the strategy seeks a low volatility basket of 9 U.S. sector ETFs (the "Equity Basket") by first identifying the minimum variance portfolios for the 3 look-back periods (the prior six months, three months and one month) respectively subject to certain weight constraints and then average the weights in the 3 identified equity asset portfolios. The strategy rebalances to the target equity weights over a 10-day period.
- Step 2: For U.S. Government Bonds, on a daily basis, the strategy employs a fixed income momentum signal to select the target U.S. Government Bond asset: either 10-Year or 2- Year U.S. Treasury futures.
- Step 3: On a daily basis, the strategy allocates between the Equity Basket and the target Bond asset, subject to a volatility target of 5%, a maximum leverage cap of 100%, minimum and maximum weights, and weight smoothing.

BASKET COMPOSITION

ASSET CLASS	UNDERLYING ASSET	TICKER	MIN WEIGHT (WITHIN ASSET CLASS)	MAX WEIGHT (WITHIN ASSET CLASS)	LEVERAGE CAP
U.S. Equities	Materials Select Sector SPDR Fund	XLB	0%	20%	100%
	Energy Select Sector SPDR Fund	XLE	0%	20%	
	Financial Select Sector SPDR Fund	XLF	0%	20%	
	Industrial Select Sector SPDR Fund	XLI	0%	20%	
	Technology Select Sector SPDR Fund	XLK	0%	20%	
	Consumer Staples Select Sector SPDR Fund	XLP	0%	20%	
	Utilities Select Sector SPDR Fund	XLU	0%	20%	
	Health Care Select Sector SPDR Fund	XLV	0%	20%	
	Consumer Discretionary Select Sector SPDR Fund	XLY	0%	20%	
U.S. Government Bonds	10Y UST Futures Position		0%	100%	
	2Y UST Futures Position		0%	100%	

INDEX PERFORMANCE VS. INDIVIDUAL ASSET CLASS SPECIFIC ETFs SINCE AUGUST 2003¹

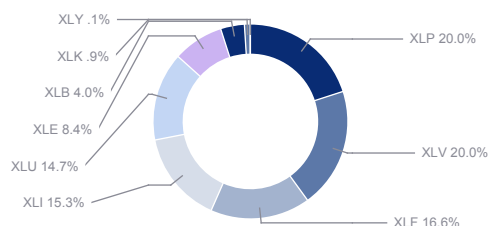


¹ Backtested performance until the Index Launch Date August 07, 2020 (calculated by Goldman Sachs International prior to July 15, 2013, and calculated by Solactive AG, the calculation agent, thereafter). Backtested performance are for illustrative purposes only. GS provides no assurance or guarantee that the Index will operate or would have operated in the past in a manner consistent with the backtested performance.

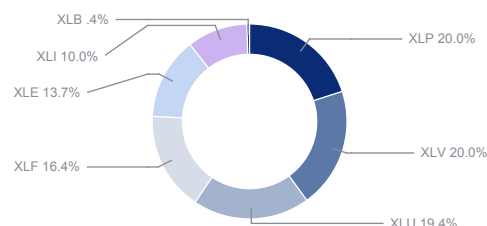
The values of the individual asset class specific ETFs are total return (i.e., ETF dividends are reinvested). The total return versions are calculated by Solactive AG. The performance is normalized such that the graph shows the percentage change in the individual asset class specific ETFs and the index as compared to their respective closing levels on August 06, 2003. The results obtained from "back-testing" information should not be considered indicative of the actual results that might be obtained from an investment or participation in a financial instrument or transaction referencing the index.

COMPOSITION WEIGHTINGS WITHIN THE U.S. EQUITIES ASSET CLASS

Weighting as of Apr-03-2023



Weighting as of Mar-01-2023

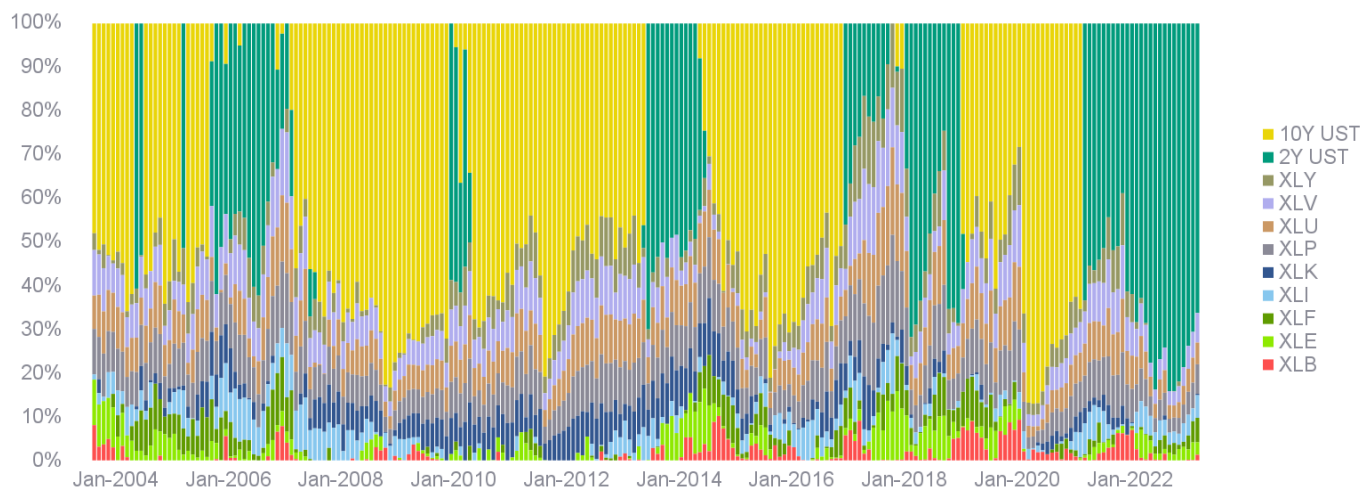


	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLY
Apr-2023	4.0%	8.4%	16.6%	15.3%	0.9%	20.0%	14.7%	20.0%	0.1%
Mar-2023	0.4%	13.7%	16.4%	10.0%	-	20.0%	19.4%	20.0%	-

This rebalancing may continue subsequent to the date of this disclosure statement supplement. Rebalancing may affect the performance of the index.

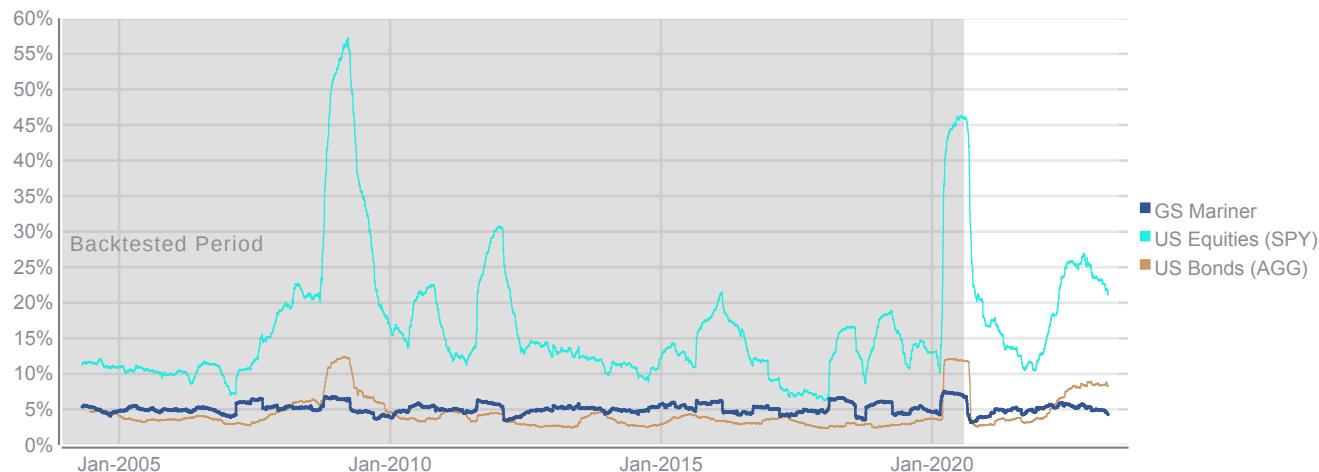
HISTORICAL COMPOSITION WITHIN THE INDEX (Rescaled to 100% Total Sum for Illustrative Purposes Only)

Includes back-tested, hypothetical performance; does not reflect actual index performance



ROLLING 6-MONTH REALIZED VOLATILITY (p.a.)

Includes back-tested, hypothetical performance; does not reflect actual index performance



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STATISTICS²

AS OF APR-03-2023	GS Mariner	US Bonds (AGG)	US Equities (SPY)
Effective Performance (1M)	1.07%	2.39%	3.31%
Effective Performance (6M)	0.77%	3.43%	14.62%
Effective Performance (1Y)	-4.60%	-6.97%	-9.35%
Effective Performance (3Y)	2.61%	-13.63%	58.83%
Effective Performance (5Y)	10.10%	-6.83%	57.56%
Performance (p.a.) (since August 2003) ³	4.33%	-0.14%	7.60%
Volatility (p.a.) (since August 2003) ^{3 4}	5.15%	4.93%	19.02%
Return over Risk (since August 2003) ⁵	0.84	-0.03	0.40
Maximum Drawdown (since August 2003) ⁶	9.79%	21.73%	56.46%

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³ Calculated on a per annum percentage basis since August 2003.

⁴ Calculated with daily returns since August 2003.

⁵ Calculated by dividing the annualized performance by the annualized realized volatility since August 2003.

⁶ The largest percentage decline experienced in the relevant measure from a previously occurring maximum level since August 2003.

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The Goldman Sachs Mariner Index is a rules-based strategy and aims to provide exposure to the underlying assets. There is no guarantee that the strategy will not underperform some or all of the underlying assets. In particular, the Goldman Sachs Mariner Index may have a significant weight in one of those assets at the time of a sudden drop, or no exposure to one of those underlying assets at a time it has a strong performance. If less than 100% of the weight of the Goldman Sachs Mariner Index is allocated to the underlying assets, there will be an allocation to a hypothetical cash position that will earn no return.

Different strategies with a different set of underlying assets may significantly outperform the selected strategy. For parts of the backtesting period, the underlying assets have had strong performances. Backtested and past performance figures are not a reliable indicator or guarantee of future results.

The strategy is not actively managed. For further information and disclosure about the strategy, including in particular relevant risk factors, please refer to the related index methodology and transaction documentation.

The index was launched on August 7, 2020. Hypothetical performance from August 6, 2003 to August 6, 2020 is based on the historical levels of the eligible index components using the same methodology that is used to calculate the index (calculated by Goldman Sachs prior to 15Jul13, and calculated by the Calculation Agent Solactive thereafter).

Hypothetical performance prior to the launch of the index on August 7, 2020 refers to simulated performance data created by applying the index's calculation methodology and strategy to historical prices of the index components that comprise the index (calculated by Goldman Sachs prior to 15Jul13, and calculated by the Calculation Agent Solactive thereafter). Such simulated performance data has been produced by the retroactive application of a back-tested methodology, and may reflect a bias towards strategies that have performed well in the past. No future performance of the index can be predicted based on the simulated performance or the historical returns described herein.

All back-tested index values for periods prior to the launch date of an index are hypothetical, and they are provided "AS IS" for informational and educational purposes only. Back-tested performance is NOT an indicator of future actual results. There are limitations inherent in hypothetical results particularly that the performance results do not represent the results of actual trading using client assets, but were achieved by means of retroactive application of a back-tested model that was designed with the benefit of hindsight. The results reflect performance of a strategy not historically offered to investors and do NOT represent returns that any investor actually attained. Back-tested results are calculated by the retroactive application of an index methodology and a model constructed on the basis of historical data and based on assumptions integral to the model which may or may not be testable and are subject to losses.

Back-tested performance is developed with the benefit of hindsight and has inherent limitations. PAST HYPOTHETICAL PERFORMANCE IS NOT A GUARANTEE OF FUTURE RETURNS. Specifically, back-tested results do not reflect actual trading, or the effect of material economic and market factors on the decision making process. The market and economic conditions present during the time period of the back-tested results is not representative of all possible market and economic conditions and scenarios that have occurred or will occur in the future. The macroeconomic risks of using the strategy in a different time period or the financial risk of executing trades in a live portfolio which include the potential market impact on security prices caused by buying or selling that could cause the model's buy or sell prices to differ from the frictionless trades of the back-tested model. There are numerous factors related to the specific products, or 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. Since trades have not actually been executed, results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity, and may not reflect the impact that certain economic or market factors may have had on the decision-making process. Further, back-testing allows the security selection methodology to be adjusted until past returns are maximized. Actual performance may differ significantly from back-tested performance.

Performance information is shown net of 0.50% per annum deduction rate, accruing daily, but there may be additional fees and costs that are separately applied to a financial product that references the index.

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INDEX REPORTING

Goldman Sachs Mariner Index

Apr-03-2023



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DETAILED HISTORICAL MONTHLY PERFORMANCE⁷

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
2023	0.11%	-2.04%	1.07%										-0.89%
2022	-2.90%	-0.62%	0.60%	-1.54%	1.03%	-1.92%	1.40%	-1.53%	-2.82%	1.14%	1.02%	-0.49%	-6.56%
2021	-0.78%	-1.65%	1.77%	1.50%	0.22%	-0.07%	1.01%	1.00%	-2.59%	2.79%	-0.67%	2.76%	5.28%
2020	0.45%	-3.47%	1.38%	0.92%	0.69%	0.17%	1.66%	0.64%	-0.32%	-1.24%	2.21%	0.44%	3.46%
2019	2.44%	0.56%	1.41%	1.23%	-1.85%	3.59%	-0.33%	0.52%	0.39%	-0.07%	0.97%	1.14%	10.38%
2018	2.82%	-3.56%	-0.76%	0.59%	0.17%	0.65%	1.65%	0.87%	0.26%	-3.54%	1.09%	-2.74%	-2.70%
2017	0.90%	2.78%	0.15%	1.16%	1.67%	-0.59%	1.28%	-0.34%	0.90%	0.65%	3.29%	0.54%	13.04%
2016	0.86%	1.37%	1.83%	-0.16%	0.37%	2.38%	0.90%	-1.43%	-0.19%	-1.47%	-0.78%	0.57%	4.25%
2015	0.31%	0.60%	-0.35%	-0.19%	0.13%	-1.67%	1.40%	-4.04%	0.73%	1.24%	-0.53%	-0.27%	-2.72%
2014	-1.05%	1.82%	0.69%	1.01%	0.86%	1.76%	-1.92%	2.51%	-1.15%	1.30%	1.72%	0.69%	8.46%
2013	2.76%	1.35%	2.32%	2.22%	-1.50%	-0.66%	1.76%	-1.60%	1.32%	2.08%	0.65%	0.63%	11.81%
2012	1.21%	0.87%	1.11%	1.18%	-1.10%	1.65%	1.24%	0.34%	1.22%	-0.86%	0.26%	-1.15%	6.07%
2011	0.57%	0.94%	0.26%	2.82%	1.38%	-0.85%	0.60%	-0.75%	-0.17%	1.14%	0.73%	1.63%	8.58%
2010	-1.56%	0.95%	1.31%	0.57%	-1.32%	0.43%	2.43%	0.49%	3.16%	1.35%	-0.62%	-0.53%	6.75%
2009	-1.76%	-1.69%	2.27%	-0.06%	-0.20%	0.03%	1.63%	1.02%	1.37%	-0.42%	3.41%	-0.50%	5.08%
2008	-1.35%	0.04%	1.15%	-0.99%	0.29%	-0.99%	-0.22%	1.87%	-3.85%	-4.19%	1.95%	2.82%	-3.67%
2007	0.71%	-0.72%	0.13%	1.98%	0.40%	-2.06%	-1.17%	1.63%	1.29%	0.98%	0.95%	-0.50%	3.60%
2006	0.32%	0.40%	-0.20%	0.10%	-1.14%	-0.10%	0.00%	1.06%	0.59%	1.45%	0.72%	0.36%	3.60%
2005	-0.20%	0.09%	-1.02%	0.25%	1.83%	0.07%	0.23%	0.60%	-0.43%	-2.01%	1.17%	-0.06%	0.48%
2004	1.16%	1.97%	0.18%	-2.37%	-0.17%	0.55%	-1.23%	2.00%	0.29%	1.18%	0.97%	1.46%	6.04%
2003								1.16%	1.54%	0.34%	0.58%	3.44%	7.22%

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DETAILED HISTORICAL WEIGHTINGS⁸

	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLV	2Y UST	10Y UST
Aug-2003	6.1%	7.8%	-	0.9%	-	7.8%	5.7%	7.8%	2.9%	-	36.0%
Sep-2003	2.8%	8.4%	-	2.3%	2.8%	8.4%	8.4%	8.0%	0.9%	-	45.3%
Oct-2003	3.5%	9.2%	-	0.9%	-	9.2%	9.0%	9.2%	5.1%	-	47.3%
Nov-2003	4.8%	9.1%	-	5.7%	-	9.1%	9.1%	7.5%	0.2%	-	51.4%
Dec-2003	2.7%	8.2%	2.7%	4.5%	-	8.2%	8.0%	5.9%	0.7%	-	48.4%
Jan-2004	0.0%	4.4%	3.9%	4.6%	-	7.7%	7.7%	7.1%	3.1%	-	42.2%
Feb-2004	3.1%	7.1%	2.0%	2.7%	-	8.5%	8.5%	8.0%	2.6%	-	51.7%
Mar-2004	0.7%	4.4%	-	5.8%	-	6.1%	6.1%	6.1%	1.2%	-	58.9%
Apr-2004	-	3.2%	2.4%	3.5%	-	5.4%	5.4%	5.4%	1.7%	-	44.2%
May-2004	-	2.2%	6.8%	2.6%	0.7%	7.9%	7.9%	7.9%	3.3%	60.8%	-
Jun-2004	-	2.3%	9.2%	4.6%	5.6%	9.4%	6.2%	9.4%	0.3%	53.2%	-
Jul-2004	-	1.1%	7.3%	1.8%	2.1%	7.6%	7.6%	7.6%	2.8%	-	51.2%
Aug-2004	-	3.4%	8.6%	5.8%	0.5%	8.6%	7.7%	8.5%	0.0%	-	56.7%
Sep-2004	-	7.1%	10.4%	-	2.4%	10.4%	10.4%	8.1%	3.2%	-	48.0%
Oct-2004	1.1%	5.5%	7.4%	-	3.7%	11.1%	11.1%	9.3%	6.2%	-	44.6%
Nov-2004	-	6.0%	4.0%	-	2.0%	7.1%	7.1%	4.3%	5.0%	-	63.9%
Dec-2004	-	5.2%	5.4%	2.7%	3.2%	5.5%	5.4%	6.8%	6.6%	-	59.1%
Jan-2005	-	6.1%	4.6%	4.9%	1.0%	10.1%	10.1%	4.2%	9.5%	-	49.5%
Feb-2005	-	2.5%	8.0%	5.7%	0.7%	8.6%	8.5%	6.7%	2.3%	-	56.9%
Mar-2005	-	1.4%	6.0%	8.7%	1.1%	9.7%	6.5%	6.8%	8.3%	51.5%	-
Apr-2005	-	2.2%	3.3%	4.2%	2.6%	7.3%	2.7%	6.6%	7.2%	-	63.8%
May-2005	-	1.4%	8.1%	0.2%	-	8.1%	7.6%	8.1%	7.1%	-	59.5%
Jun-2005	-	0.7%	5.0%	3.5%	5.9%	9.7%	9.7%	9.7%	4.4%	-	51.4%
Jul-2005	-	2.3%	9.9%	-	6.0%	9.9%	9.9%	9.9%	1.6%	-	50.7%
Aug-2005	-	0.8%	9.0%	-	8.2%	9.3%	9.3%	9.3%	0.7%	-	53.4%
Sep-2005	-	4.5%	9.5%	5.3%	10.1%	11.6%	5.5%	11.6%	-	33.0%	8.9%
Oct-2005	0.3%	3.7%	3.2%	5.1%	7.4%	7.6%	3.1%	7.6%	-	62.1%	-
Nov-2005	-	0.1%	9.7%	9.0%	9.7%	9.8%	0.6%	9.7%	-	51.3%	-
Dec-2005	5.6%	1.6%	4.2%	10.9%	8.9%	11.3%	2.6%	11.3%	-	34.3%	9.5%
Jan-2006	0.6%	0.4%	7.8%	6.7%	10.1%	10.1%	1.5%	10.1%	3.2%	49.5%	-
Feb-2006	0.6%	0.5%	4.1%	11.3%	3.8%	11.3%	8.7%	11.1%	5.0%	43.7%	-
Mar-2006	-	2.5%	1.8%	9.7%	3.3%	11.4%	10.1%	10.5%	7.6%	37.9%	5.3%
Apr-2006	-	0.4%	4.4%	9.6%	3.3%	11.1%	8.3%	11.1%	7.4%	44.6%	-
May-2006	-	2.1%	2.5%	9.3%	0.4%	9.3%	4.3%	9.3%	9.1%	53.8%	-
Jun-2006	-	0.1%	1.4%	7.9%	4.0%	7.9%	2.5%	7.9%	7.9%	60.4%	-
Jul-2006	-	-	1.1%	6.5%	-	7.6%	7.5%	7.5%	7.5%	62.3%	-
Aug-2006	-	1.7%	1.2%	8.4%	1.8%	9.9%	9.8%	9.8%	6.5%	51.0%	-
Sep-2006	1.0%	2.7%	8.6%	5.1%	0.8%	11.9%	11.8%	11.8%	5.4%	40.9%	-
Oct-2006	-	4.7%	11.5%	6.1%	1.7%	13.6%	13.6%	13.6%	3.3%	32.0%	-
Nov-2006	6.6%	1.5%	11.8%	6.8%	-	13.2%	13.3%	13.3%	-	22.7%	10.8%
Dec-2006	7.9%	3.4%	12.3%	6.7%	-	15.1%	15.1%	15.1%	-	21.7%	2.6%
Jan-2007	4.1%	2.5%	7.9%	12.3%	-	16.1%	16.1%	16.1%	5.4%	19.7%	-
Feb-2007	1.3%	3.6%	11.2%	8.1%	-	12.1%	12.1%	12.1%	-	19.7%	20.0%
Mar-2007	0.4%	1.5%	0.8%	8.8%	0.1%	8.8%	8.2%	8.8%	6.6%	-	56.1%
Apr-2007	-	2.0%	-	10.7%	2.6%	10.7%	10.5%	10.8%	6.3%	-	46.4%
May-2007	-	0.9%	1.6%	11.9%	5.5%	12.0%	11.9%	11.9%	4.1%	-	40.3%

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	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLX	2Y UST	10Y UST
Jun-2007	-	-	0.4%	6.5%	2.7%	6.5%	5.0%	6.5%	4.9%	10.7%	55.8%
Jul-2007	-	-	-	7.4%	6.6%	7.4%	1.0%	7.4%	7.1%	6.2%	57.0%
Aug-2007	-	-	-	7.2%	7.2%	7.2%	0.3%	7.2%	7.0%	-	63.8%
Sep-2007	-	-	-	6.6%	6.6%	6.6%	0.2%	6.6%	6.4%	-	67.1%
Oct-2007	-	-	2.9%	5.8%	8.7%	8.7%	6.2%	8.7%	2.5%	-	56.7%
Nov-2007	-	-	-	7.5%	5.8%	7.7%	5.2%	7.6%	4.4%	-	61.8%
Dec-2007	-	-	-	8.2%	7.5%	8.2%	8.2%	8.2%	0.7%	-	58.9%
Jan-2008	-	-	-	1.8%	5.1%	5.2%	5.2%	5.2%	3.6%	-	56.6%
Feb-2008	-	-	-	5.5%	4.9%	5.5%	5.3%	5.5%	0.7%	-	51.3%
Mar-2008	0.5%	-	-	6.3%	6.1%	6.3%	5.4%	6.3%	0.7%	-	66.0%
Apr-2008	-	-	-	4.6%	6.8%	8.2%	8.2%	8.2%	4.9%	-	59.2%
May-2008	-	2.2%	-	3.9%	5.8%	6.6%	6.6%	6.6%	1.2%	-	63.3%
Jun-2008	0.3%	3.8%	-	5.4%	2.9%	6.9%	6.9%	6.9%	1.3%	-	65.5%
Jul-2008	-	4.2%	-	3.5%	5.3%	6.5%	6.5%	6.5%	-	-	54.7%
Aug-2008	3.1%	2.9%	-	0.5%	7.1%	7.1%	7.1%	7.1%	0.6%	-	64.6%
Sep-2008	1.7%	2.4%	-	-	4.4%	4.4%	4.4%	4.4%	0.3%	-	52.1%
Oct-2008	1.1%	-	-	1.3%	0.1%	1.3%	1.3%	1.3%	0.2%	-	30.6%
Nov-2008	-	-	-	1.6%	0.2%	1.6%	1.4%	1.6%	1.5%	-	39.2%
Dec-2008	0.4%	-	-	1.9%	0.6%	1.9%	1.9%	1.9%	0.8%	-	32.7%
Jan-2009	0.1%	0.2%	-	2.0%	1.8%	2.3%	2.3%	2.3%	0.6%	-	35.8%
Feb-2009	0.0%	-	-	2.4%	2.3%	2.4%	2.4%	2.4%	0.2%	-	37.6%
Mar-2009	0.5%	-	-	1.4%	1.9%	2.2%	2.2%	2.2%	0.5%	-	26.5%
Apr-2009	1.8%	-	-	0.8%	2.8%	2.8%	2.8%	2.8%	0.1%	-	36.6%
May-2009	1.2%	1.0%	-	0.7%	2.9%	2.9%	2.9%	2.9%	0.1%	-	39.4%
Jun-2009	0.9%	0.4%	-	-	3.5%	3.5%	3.5%	3.5%	2.1%	-	39.6%
Jul-2009	0.6%	0.4%	1.0%	-	4.1%	4.1%	4.1%	4.1%	2.0%	-	44.8%
Aug-2009	0.3%	0.2%	-	1.0%	5.1%	5.1%	5.1%	5.1%	3.7%	-	51.6%
Sep-2009	0.2%	0.7%	0.7%	1.3%	6.1%	6.1%	6.1%	6.1%	3.2%	-	61.1%
Oct-2009	-	0.5%	-	2.0%	6.3%	6.3%	6.3%	6.3%	3.8%	-	62.2%
Nov-2009	-	-	-	-	5.4%	5.4%	5.4%	5.4%	5.4%	-	70.0%
Dec-2009	-	1.5%	-	-	8.2%	8.2%	8.2%	8.2%	6.8%	58.8%	-
Jan-2010	-	2.3%	2.0%	-	6.6%	8.2%	8.2%	8.2%	5.4%	53.6%	5.7%
Feb-2010	-	1.2%	-	2.1%	4.4%	7.7%	7.7%	7.7%	7.7%	25.0%	36.6%
Mar-2010	-	-	-	-	8.8%	8.8%	8.8%	8.8%	8.8%	49.6%	6.2%
Apr-2010	-	-	3.3%	-	10.0%	10.0%	10.0%	10.0%	6.6%	15.9%	34.3%
May-2010	-	-	-	1.8%	6.5%	6.5%	6.5%	6.5%	4.7%	-	67.8%
Jun-2010	-	2.8%	-	1.1%	6.1%	6.1%	6.1%	6.1%	2.2%	-	69.6%
Jul-2010	-	-	-	-	6.4%	6.4%	6.4%	6.4%	6.4%	-	68.2%
Aug-2010	-	2.5%	-	-	7.5%	7.5%	7.5%	7.5%	5.0%	-	62.4%
Sep-2010	-	0.1%	-	-	7.5%	7.5%	7.5%	7.5%	7.4%	-	62.5%
Oct-2010	2.0%	3.3%	-	-	7.3%	7.3%	7.3%	7.3%	2.0%	-	63.4%
Nov-2010	-	1.5%	1.5%	-	5.6%	5.8%	5.8%	5.3%	3.6%	-	51.3%
Dec-2010	-	-	-	-	7.2%	7.2%	7.2%	7.2%	7.2%	-	48.0%
Jan-2011	-	0.7%	0.1%	-	7.6%	7.7%	7.7%	7.7%	7.0%	-	57.5%
Feb-2011	-	2.2%	-	3.3%	8.3%	9.9%	9.9%	9.9%	6.0%	-	50.5%
Mar-2011	-	6.5%	-	-	8.8%	9.7%	9.7%	9.7%	4.2%	-	51.5%
Apr-2011	-	4.0%	2.6%	-	3.4%	9.9%	9.9%	9.9%	9.9%	-	50.6%
May-2011	-	2.4%	4.8%	-	7.9%	11.2%	7.9%	11.2%	10.5%	-	44.1%

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	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLX	2Y UST	10Y UST
Jun-2011	-	1.2%	2.8%	1.4%	5.1%	10.4%	10.4%	10.4%	10.4%	-	47.9%
Jul-2011	-	0.6%	2.7%	-	8.5%	8.5%	8.5%	8.5%	5.1%	-	57.8%
Aug-2011	-	0.1%	-	-	3.2%	3.2%	3.2%	3.2%	3.2%	-	68.0%
Sep-2011	-	-	-	-	4.7%	4.7%	4.7%	4.7%	4.7%	-	76.7%
Oct-2011	-	-	-	-	5.7%	5.7%	5.7%	5.7%	5.7%	-	71.3%
Nov-2011	-	-	-	-	6.2%	6.2%	6.2%	6.2%	6.2%	-	68.9%
Dec-2011	-	-	-	-	6.8%	6.8%	6.8%	6.8%	6.8%	-	65.8%
Jan-2012	-	-	-	-	7.7%	7.7%	7.7%	7.7%	7.7%	-	61.4%
Feb-2012	-	-	-	-	9.6%	9.6%	9.6%	9.6%	9.6%	-	52.0%
Mar-2012	-	1.7%	-	-	8.5%	10.2%	10.2%	10.2%	10.2%	-	48.8%
Apr-2012	-	1.2%	-	-	10.1%	10.1%	10.1%	10.1%	8.8%	-	49.8%
May-2012	-	5.5%	-	-	5.6%	10.8%	10.8%	10.8%	10.4%	-	46.2%
Jun-2012	-	0.7%	0.5%	2.7%	9.4%	9.4%	9.4%	9.4%	5.6%	-	52.8%
Jul-2012	-	-	-	0.4%	9.2%	9.2%	9.2%	9.2%	8.8%	-	54.1%
Aug-2012	2.1%	-	1.3%	0.2%	9.5%	11.2%	11.2%	11.2%	9.2%	-	44.2%
Sep-2012	0.1%	-	0.5%	0.8%	9.7%	11.1%	11.1%	11.1%	11.1%	-	44.5%
Oct-2012	-	-	0.5%	3.8%	6.9%	11.1%	11.1%	11.1%	11.1%	-	44.5%
Nov-2012	-	-	1.4%	5.5%	7.0%	9.2%	9.2%	6.1%	7.6%	-	54.1%
Dec-2012	0.9%	-	-	4.4%	5.3%	10.6%	10.6%	10.6%	10.6%	-	46.8%
Jan-2013	1.7%	-	-	7.5%	3.8%	9.8%	9.7%	9.7%	6.5%	-	19.8%
Feb-2013	0.3%	0.3%	0.5%	3.7%	7.8%	8.2%	10.4%	10.4%	10.4%	-	42.7%
Mar-2013	-	-	-	1.7%	9.5%	11.2%	11.2%	11.2%	11.2%	-	44.1%
Apr-2013	0.2%	3.0%	-	2.7%	8.4%	9.0%	9.0%	7.0%	5.6%	-	54.9%
May-2013	-	-	-	7.6%	9.7%	9.7%	9.7%	9.7%	2.1%	5.1%	46.3%
Jun-2013	-	0.2%	-	5.5%	6.0%	6.0%	6.0%	4.1%	2.3%	70.1%	-
Jul-2013	2.9%	-	-	6.8%	8.6%	8.2%	8.6%	5.7%	2.2%	57.1%	-
Aug-2013	1.5%	1.4%	0.2%	1.7%	9.3%	9.3%	7.9%	8.0%	7.0%	53.5%	-
Sep-2013	3.6%	5.0%	-	1.4%	10.0%	10.0%	10.0%	10.0%	-	50.2%	-
Oct-2013	-	8.3%	0.1%	-	9.2%	8.2%	6.8%	9.2%	4.3%	53.8%	-
Nov-2013	-	10.2%	-	3.4%	10.2%	10.2%	10.2%	6.8%	-	49.2%	-
Dec-2013	-	6.3%	-	4.0%	10.3%	10.3%	10.3%	10.3%	-	48.5%	-
Jan-2014	0.8%	8.8%	0.1%	2.7%	9.3%	9.2%	9.0%	3.4%	3.1%	53.6%	-
Feb-2014	5.3%	5.5%	0.7%	-	9.6%	9.6%	9.6%	4.9%	2.7%	52.1%	-
Mar-2014	5.3%	10.0%	0.2%	-	10.2%	10.5%	10.5%	3.2%	2.7%	47.4%	-
Apr-2014	1.6%	9.6%	2.1%	0.3%	6.7%	10.1%	10.1%	4.1%	5.9%	49.4%	-
May-2014	1.9%	11.4%	6.8%	3.4%	7.7%	11.4%	11.4%	1.7%	1.3%	34.6%	8.2%
Jun-2014	3.8%	12.6%	5.2%	-	9.8%	12.9%	12.6%	1.2%	6.4%	10.8%	24.7%
Jul-2014	2.1%	10.5%	11.5%	-	13.0%	13.9%	10.8%	5.9%	1.7%	-	30.6%
Aug-2014	8.8%	4.2%	6.2%	-	10.2%	11.7%	11.5%	3.4%	2.6%	-	41.3%
Sep-2014	10.2%	2.0%	6.4%	0.5%	10.0%	11.3%	10.2%	1.7%	4.0%	-	43.7%
Oct-2014	7.4%	0.5%	7.2%	3.0%	4.8%	7.7%	7.7%	-	0.4%	-	61.3%
Nov-2014	4.8%	0.1%	9.7%	0.2%	10.0%	10.1%	9.8%	0.1%	5.5%	48.5%	-
Dec-2014	2.9%	1.0%	8.7%	1.8%	8.4%	8.9%	6.7%	0.8%	5.4%	48.5%	-
Jan-2015	1.0%	0.3%	6.1%	3.3%	5.5%	9.5%	9.5%	2.9%	9.5%	-	52.3%
Feb-2015	0.5%	0.0%	1.1%	3.0%	4.9%	6.8%	6.6%	4.3%	6.8%	-	64.4%
Mar-2015	0.2%	0.3%	1.0%	3.1%	3.6%	4.5%	3.1%	2.2%	4.5%	-	54.2%
Apr-2015	3.4%	2.8%	1.9%	0.3%	6.3%	6.9%	4.4%	1.8%	6.6%	-	65.6%
May-2015	3.8%	1.7%	4.9%	2.6%	1.7%	6.0%	3.0%	2.7%	3.6%	-	67.7%

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	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLX	2Y UST	10Y UST
Jun-2015	2.5%	5.6%	7.3%	3.8%	0.1%	8.5%	4.4%	1.8%	8.4%	-	57.6%
Jul-2015	1.2%	6.3%	4.7%	5.3%	1.0%	9.4%	9.2%	1.1%	8.8%	-	52.8%
Aug-2015	0.3%	1.8%	2.9%	0.6%	1.4%	3.2%	3.0%	0.1%	2.7%	-	69.1%
Sep-2015	3.5%	-	1.6%	5.2%	-	5.2%	5.2%	0.1%	5.2%	-	73.9%
Oct-2015	0.9%	-	4.0%	6.0%	0.1%	6.2%	6.2%	1.5%	6.2%	-	68.9%
Nov-2015	1.4%	-	2.5%	4.5%	1.1%	6.6%	6.7%	4.3%	6.5%	-	66.5%
Dec-2015	3.4%	-	3.5%	4.2%	1.2%	5.1%	5.6%	2.0%	4.3%	48.5%	-
Jan-2016	3.0%	-	-	5.2%	0.3%	6.3%	6.3%	4.5%	5.9%	-	68.4%
Feb-2016	1.0%	-	-	6.1%	0.2%	6.1%	6.1%	5.7%	5.4%	-	69.3%
Mar-2016	0.1%	-	-	7.4%	2.2%	7.4%	7.4%	7.3%	5.2%	-	62.8%
Apr-2016	-	-	-	8.9%	0.5%	8.9%	8.8%	8.7%	8.6%	-	55.7%
May-2016	0.0%	0.3%	0.3%	8.6%	4.7%	8.9%	8.2%	7.2%	6.3%	-	55.4%
Jun-2016	0.3%	2.6%	2.8%	6.0%	1.7%	9.4%	9.4%	9.4%	5.3%	-	53.0%
Jul-2016	-	0.9%	-	4.4%	5.7%	10.2%	10.1%	10.2%	9.4%	-	49.1%
Aug-2016	0.1%	2.7%	0.4%	3.4%	9.1%	11.3%	10.2%	11.3%	8.0%	-	43.4%
Sep-2016	0.4%	0.4%	2.3%	1.8%	4.9%	6.0%	5.2%	6.1%	3.6%	-	69.3%
Oct-2016	0.5%	0.2%	6.2%	2.7%	8.8%	7.7%	4.9%	9.0%	6.7%	-	53.3%
Nov-2016	0.5%	0.6%	6.8%	4.9%	9.4%	9.8%	5.4%	6.5%	5.1%	-	51.1%
Dec-2016	5.8%	1.6%	6.9%	1.6%	6.2%	10.8%	6.0%	4.8%	10.1%	48.5%	-
Jan-2017	6.9%	2.6%	7.1%	7.3%	3.4%	12.6%	4.4%	11.2%	7.6%	36.8%	-
Feb-2017	4.5%	1.5%	2.9%	9.4%	5.5%	14.3%	8.0%	13.0%	12.9%	28.1%	-
Mar-2017	9.1%	2.6%	2.0%	6.3%	7.5%	13.9%	5.9%	12.4%	14.2%	26.1%	-
Apr-2017	1.6%	0.9%	1.0%	3.7%	12.1%	16.6%	14.5%	16.3%	16.6%	16.8%	-
May-2017	2.5%	1.8%	0.0%	2.6%	10.3%	15.8%	14.4%	15.7%	15.4%	21.5%	-
Jun-2017	-	7.5%	0.5%	2.1%	5.9%	15.5%	15.5%	15.5%	14.9%	22.7%	-
Jul-2017	0.0%	10.9%	4.7%	1.0%	6.7%	16.6%	16.6%	16.4%	10.2%	16.9%	-
Aug-2017	0.1%	6.8%	8.2%	7.4%	4.2%	15.6%	15.6%	13.5%	6.7%	21.9%	-
Sep-2017	0.1%	13.6%	4.1%	7.5%	1.2%	18.1%	18.1%	17.5%	10.3%	9.5%	-
Oct-2017	0.0%	11.2%	4.0%	13.8%	2.5%	20.0%	20.0%	13.6%	14.9%	-	-
Nov-2017	0.2%	15.7%	8.0%	3.7%	0.8%	17.2%	17.5%	13.5%	12.2%	1.2%	10.1%
Dec-2017	0.2%	11.6%	10.3%	0.1%	7.6%	13.4%	17.8%	13.9%	14.4%	48.5%	-
Jan-2018	2.1%	8.2%	5.8%	1.2%	4.3%	13.3%	12.9%	7.8%	11.0%	33.4%	-
Feb-2018	2.1%	1.5%	3.9%	2.3%	0.8%	5.6%	5.6%	2.0%	4.4%	71.8%	-
Mar-2018	1.1%	2.4%	0.3%	2.7%	-	6.2%	6.2%	6.0%	6.2%	48.5%	-
Apr-2018	0.2%	6.1%	0.2%	1.2%	-	7.3%	7.3%	7.1%	7.0%	63.6%	-
May-2018	0.3%	7.6%	2.6%	2.4%	0.3%	8.6%	8.7%	6.8%	6.0%	56.8%	-
Jun-2018	2.8%	6.7%	0.7%	2.9%	3.5%	9.8%	10.4%	5.9%	9.3%	48.2%	-
Jul-2018	0.6%	6.2%	8.2%	4.1%	4.1%	12.2%	12.2%	4.7%	8.6%	39.1%	-
Aug-2018	0.1%	10.0%	9.9%	0.1%	2.5%	13.2%	13.2%	4.5%	12.7%	33.9%	-
Sep-2018	-	10.2%	8.9%	0.8%	5.2%	15.0%	14.8%	11.3%	9.1%	24.8%	-
Oct-2018	0.5%	5.1%	6.1%	0.1%	-	6.6%	5.8%	4.8%	5.6%	65.4%	-
Nov-2018	5.0%	3.8%	2.7%	0.3%	-	7.0%	7.0%	5.9%	3.2%	65.2%	-
Dec-2018	5.2%	1.5%	5.4%	1.5%	-	6.3%	6.3%	4.6%	0.6%	48.5%	-
Jan-2019	7.6%	0.3%	7.8%	-	-	7.8%	7.8%	7.8%	-	12.6%	48.3%
Feb-2019	6.9%	2.7%	9.1%	-	0.0%	9.1%	9.1%	8.4%	0.1%	-	54.7%
Mar-2019	9.0%	0.1%	10.1%	0.3%	0.3%	10.4%	10.4%	10.0%	1.3%	-	48.2%
Apr-2019	6.3%	1.3%	8.3%	3.7%	0.4%	12.1%	12.1%	9.0%	7.1%	-	39.6%
May-2019	5.2%	2.6%	5.5%	0.5%	3.4%	10.4%	10.4%	8.0%	6.1%	-	47.8%

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	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLX	2Y UST	10Y UST
Jun-2019	2.5%	2.5%	7.1%	0.6%	-	9.2%	9.2%	9.2%	5.7%	-	53.9%
Jul-2019	-	7.5%	7.5%	0.4%	-	11.5%	11.8%	11.8%	8.5%	-	40.9%
Aug-2019	0.5%	6.2%	2.1%	3.0%	-	6.0%	7.8%	7.8%	5.7%	-	60.8%
Sep-2019	6.7%	3.2%	0.2%	5.0%	-	10.1%	10.1%	10.1%	5.1%	-	49.6%
Oct-2019	5.9%	6.5%	1.6%	2.0%	0.0%	10.3%	10.3%	10.3%	4.7%	-	48.4%
Nov-2019	8.7%	3.8%	0.4%	0.1%	0.1%	12.1%	12.1%	11.9%	11.4%	48.5%	-
Dec-2019	7.0%	6.9%	4.1%	0.3%	-	13.5%	13.5%	11.8%	10.4%	48.5%	-
Jan-2020	9.3%	2.5%	-	3.7%	-	14.3%	14.3%	14.1%	13.3%	-	28.4%
Feb-2020	2.1%	0.6%	-	4.0%	-	6.7%	6.7%	6.7%	6.7%	-	66.4%
Mar-2020	0.1%	-	-	1.2%	-	1.3%	1.3%	1.3%	1.3%	-	42.9%
Apr-2020	1.9%	-	-	0.2%	0.1%	1.9%	1.7%	1.9%	1.9%	-	63.9%
May-2020	1.7%	-	-	1.4%	0.7%	2.3%	0.9%	2.3%	2.3%	-	77.3%
Jun-2020	2.0%	-	-	0.4%	1.5%	3.2%	2.4%	3.2%	3.2%	-	84.2%
Jul-2020	1.4%	-	0.0%	-	2.9%	4.3%	4.2%	4.3%	4.3%	-	78.6%
Aug-2020	1.8%	-	0.7%	-	3.2%	5.3%	5.1%	5.3%	5.2%	-	73.4%
Sep-2020	1.9%	0.0%	1.9%	0.1%	2.9%	5.2%	4.2%	5.2%	4.5%	-	74.2%
Oct-2020	0.3%	0.0%	3.6%	0.5%	1.2%	5.6%	5.5%	5.5%	5.5%	-	72.3%
Nov-2020	2.7%	-	2.3%	0.1%	1.1%	5.7%	5.7%	5.7%	5.2%	-	71.4%
Dec-2020	1.7%	-	0.9%	1.9%	3.1%	7.2%	7.1%	7.1%	7.2%	48.5%	-
Jan-2021	0.9%	0.0%	1.4%	4.2%	3.6%	7.5%	6.5%	6.3%	7.1%	-	62.6%
Feb-2021	0.1%	0.4%	0.3%	5.1%	4.2%	6.2%	5.9%	6.2%	2.7%	-	58.6%
Mar-2021	0.7%	0.5%	0.3%	7.1%	3.5%	7.3%	7.3%	7.3%	2.6%	63.4%	-
Apr-2021	-	1.3%	3.6%	6.2%	2.5%	8.9%	8.9%	8.9%	4.2%	55.5%	-
May-2021	0.2%	2.9%	1.5%	8.1%	1.7%	8.7%	8.7%	8.7%	2.9%	48.5%	-
Jun-2021	1.6%	2.4%	4.7%	3.5%	1.6%	9.0%	8.9%	9.2%	4.9%	54.2%	-
Jul-2021	1.9%	2.2%	0.1%	7.1%	3.8%	8.6%	7.2%	9.7%	7.9%	51.5%	-
Aug-2021	2.9%	1.8%	0.3%	3.3%	4.4%	11.1%	11.0%	11.1%	9.6%	44.5%	-
Sep-2021	3.1%	0.6%	2.2%	1.1%	2.8%	9.6%	9.4%	9.6%	9.6%	52.0%	-
Oct-2021	6.3%	0.7%	-0.0%	0.6%	2.2%	9.8%	9.8%	9.8%	9.8%	51.1%	-
Nov-2021	6.2%	1.7%	-	0.3%	4.3%	12.2%	12.2%	12.2%	11.9%	39.0%	-
Dec-2021	5.8%	0.0%	0.1%	0.0%	3.7%	7.7%	7.6%	7.7%	5.8%	48.5%	-
Jan-2022	7.0%	0.4%	0.5%	0.7%	0.2%	7.6%	7.6%	7.6%	6.4%	62.0%	-
Feb-2022	2.6%	3.7%	0.1%	4.8%	-	6.3%	6.3%	6.3%	1.5%	68.4%	-
Mar-2022	0.6%	6.4%	0.7%	5.9%	-	7.4%	7.4%	7.4%	1.2%	62.9%	-
Apr-2022	0.3%	5.6%	0.1%	6.3%	-	6.3%	6.3%	6.1%	0.4%	68.6%	-
May-2022	1.7%	2.9%	1.2%	4.5%	-	4.5%	4.5%	3.2%	-	77.7%	-
Jun-2022	0.2%	1.3%	1.7%	3.2%	-	3.2%	3.2%	3.2%	-	83.8%	-
Jul-2022	0.2%	1.5%	3.1%	4.5%	0.1%	4.6%	4.6%	4.6%	-	76.8%	-
Aug-2022	1.6%	1.1%	3.1%	3.5%	1.0%	5.2%	5.2%	5.2%	-	74.2%	-
Sep-2022	-	1.8%	1.8%	2.8%	-	3.2%	3.1%	3.2%	-	84.2%	-
Oct-2022	-	1.3%	2.7%	2.6%	-	3.2%	2.8%	3.2%	0.1%	84.1%	-
Nov-2022	-	2.6%	1.0%	2.5%	-	3.6%	3.6%	3.6%	1.1%	82.0%	-
Dec-2022	0.0%	3.1%	1.2%	4.2%	-	4.3%	4.3%	4.3%	-	48.5%	-
Jan-2023	0.2%	2.3%	3.2%	4.7%	-	5.2%	5.2%	5.2%	-	73.8%	-
Feb-2023	0.1%	4.0%	4.8%	2.9%	-	5.9%	5.7%	5.9%	-	70.6%	-
Mar-2023	1.3%	2.8%	5.6%	5.2%	0.3%	6.7%	5.0%	6.7%	0.0%	66.3%	-

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* Backtested performance until the Index Launch Date August 07, 2020 (calculated by Goldman Sachs International prior to July 15, 2013, and calculated by Solactive AG, the calculation agent, thereafter). Backtested performance are for illustrative purposes only. GS provides no assurance or guarantee that the Index will operate or would have operated in the past in a manner consistent with the backtested performance.