Goldman Sachs Voyager Index ("GSVOYGR")

Monthly Report as of April 3, 2023
For Financial Representative Use Only

FICC and Equities

Index Key Facts

Ticker	GSVOYGR Index
RIC	.GSVOYGR
Sponsor and Calculation Agent[1]	Goldman Sachs & Co. LLC
Currency	USD
Launch Date	June 7, 2019
Volatility Target	6%
Return Type	Excess Return
Index Fee[2]	0.50% p.a.
Number of Underlyers	13 Underlying Indices
Rebalancing Frequency	Daily

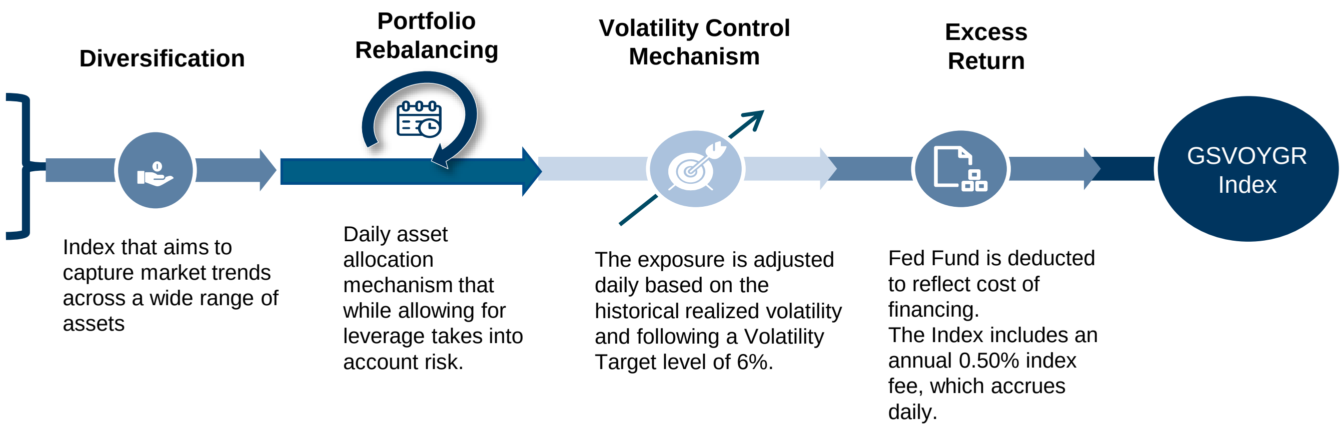
Overview

The Goldman Sachs Voyager Index ("GSVOYGR") seeks to :

- **Global Diversification**:
  Provide diversified exposure to global assets including equity, fixed income, emerging markets, commodities and alternative assets.
- **Momentum Driven Approach**:
  Capitalize on price trends, rebalancing allocations daily, in response to changing market conditions to help capture upside opportunity.
- **Dynamic Risk Management:**
  Maintain a stable level of risk over time, resulting in more consistent returns even during periods of market volatility.

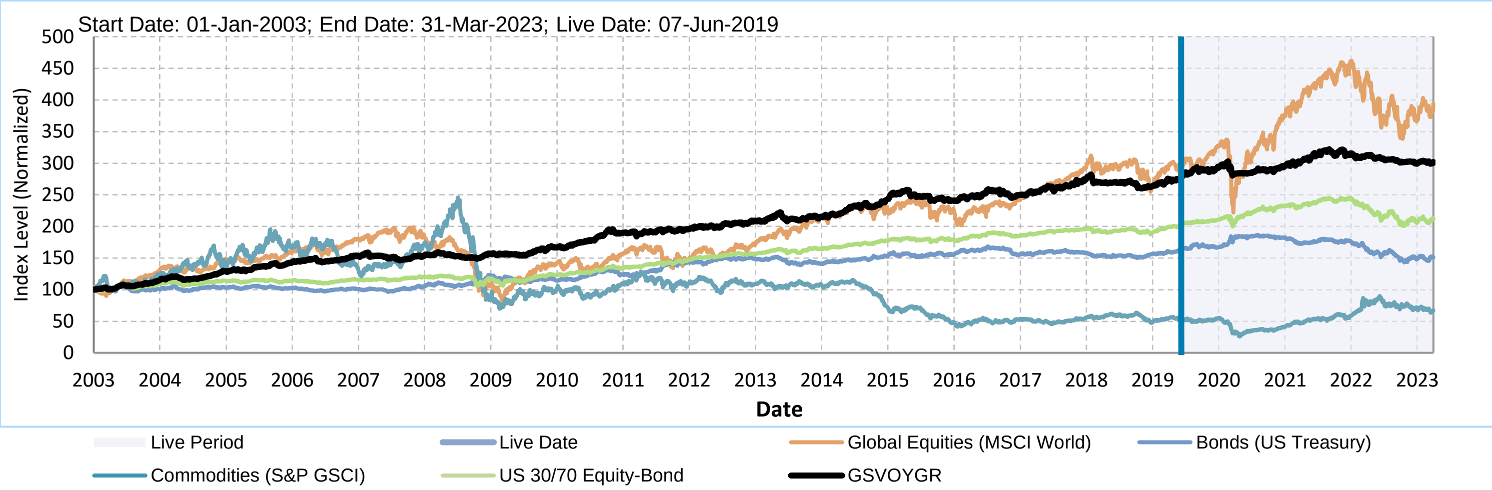
Rebalancing Process

- **Step 1:** Each underlying asset is scaled up/down on a daily basis to target a volatility of 6% (subject to a maximum weight of 200% for fixed income and 100% for the remaining underlyers)
- **Step 2:** On each index business day, test all the possible portfolio combinations of the underlying assets (comprised of the 13 underlying indices and the Money Market Position)
- **Step 3:** For each realized volatility look-back period (the prior nine months, six months and three month) consider only those portfolios that have a realized volatility of 6% or less for such look-back period. The portfolio optimization process allows for selection of portfolios where the sum of weights allocated to input underlying indices may be up to 250%. The index may hence exhibit a high degree of leveraged exposure to its components.
- **Step 4:** Of the remaining portfolios for each realized volatility look-back period, choose the portfolio for such realized volatility look-back period that has the highest realized historical return over the related return look-back period (the prior nine months, six months and three months for the nine-month, six-month and three-month realized volatility look-back periods, respectively)
- **Step 5:** Average the weights of each underlying asset in the 3 portfolios chosen in step 4 (one portfolio for each of the 3 {return look-back period, realized volatility look-back period} pairs) to determine the target weight of such underlying asset for that day
- **Step 6:** Average the target weights of each underlying asset over the weight averaging period which is comprised of such day and each of the prior 21 index business days to determine the daily weight of such underlying asset, effective after the close of business on that day
- **Step 7:** On a daily basis, monitor the realized volatility based on the current weights of the underlying assets over the previous 66 business days. If this volatility exceeds 6%, a pro-rata portion of the underlying assets is allocated to the deleveraged position (Money Market Position) with a maximum leverage of 100%.
- **Step 8:** 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 (accruing daily), with gross dividends reinvested.



[1] GSVOYGR Index is a rules based index and the details of the index methodology can be found at https://www.goldmansachsindices.com/products/GSVOYGR.
[2] The Index Fee is fixed at 0.50% per annum.

Strategy Realized and Backtested Performance



Key Realized and Backtested Performance Statistics

	GSVOYGR	US 30/70 Equity-Bond	Global Equities (MSCI World)	Bonds (US Treasury)	Commodities (S&P GSCI)
Return last 1 month	0.27%	2.99%	2.68%	3.26%	(1.47)%
Return Year-to-Date	0.96%	3.09%	6.51%	2.36%	(6.02)%
Return last 3 years (p.a.)	2.10%	0.73%	15.25%	(6.11)%	29.24%
Return last 5 years (p.a.)	2.33%	2.06%	6.52%	(0.46)%	3.47%
Return since Jan 2003 (p.a.)	5.58%	3.77%	7.01%	2.08%	(1.91)%
Volatility since Jan 2003 (p.a.)	4.91%	5.83%	16.16%	6.51%	23.53%
Return over Risk since Jan 2003[1]	1.14	65.18%	0.43	0.32	Neg.
Maximum Drawdown since Jan 2003[2]	(7.93)%	(18.40)%	(58.96)%	(23.22)%	(89.35)%

Monthly Realized and Backtested Returns[1]

in %	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year Rtn	Ann Vol	Sharpe
2003	1.23	1.87	-1.70	0.76	4.24	-0.39	-0.34	1.53	0.56	1.70	1.37	3.40	15.05	4.53	3.40
2004	1.33	2.80	1.14	-3.28	-0.26	0.30	0.35	1.84	1.26	2.10	2.43	1.97	12.51	4.68	2.66
2005	0.57	0.55	-0.04	-0.44	2.57	2.30	0.58	0.78	2.73	-3.12	1.73	1.84	10.36	4.92	2.11
2006	2.11	0.15	1.13	0.41	-2.16	-0.23	0.59	1.05	0.65	1.50	1.64	0.63	7.66	4.48	1.71
2007	0.77	-0.46	-0.60	0.11	-0.88	-1.28	-0.86	-1.01	0.87	2.30	0.63	0.39	-0.07	5.06	Neg.
2008	0.78	1.82	0.07	-1.84	-0.39	-0.66	-1.11	-0.49	-0.27	-0.42	3.13	1.79	2.34	4.33	0.54
2009	-1.38	0.39	1.06	-0.98	-0.09	-0.56	2.05	1.93	1.57	-1.02	3.76	-1.00	5.73	5.19	1.11
2010	-0.21	1.55	1.42	2.26	0.44	1.55	0.82	3.69	2.24	0.98	-1.75	0.45	14.16	5.12	2.77
2011	-0.19	1.48	-2.01	2.27	0.16	-1.14	2.53	-0.60	-0.78	0.50	-0.07	1.34	3.44	5.09	0.68
2012	1.73	0.11	0.07	0.64	-0.39	-0.14	2.34	0.11	0.12	-0.25	1.28	0.67	6.44	4.66	1.39
2013	-0.54	1.03	2.31	2.33	-2.63	-2.01	0.73	-0.92	1.13	2.01	0.52	-0.66	3.20	5.12	0.62
2014	0.00	1.92	-0.35	1.55	2.81	1.61	-1.23	3.32	-2.32	1.10	2.38	1.28	12.58	4.97	2.54
2015	4.30	0.04	0.63	-1.21	-0.41	-1.48	0.37	-2.56	0.73	0.18	-0.37	-0.93	-0.87	5.24	Neg.
2016	1.38	1.43	0.04	-0.24	0.29	3.61	0.62	-1.40	0.34	-2.24	-1.12	1.13	3.77	5.13	0.73
2017	-0.41	2.31	0.19	1.28	1.09	-1.34	1.39	0.86	0.07	2.15	0.70	1.05	9.71	5.08	1.92
2018	1.86	-3.39	-0.21	0.00	0.17	0.03	-0.11	1.24	-1.69	-2.77	0.72	0.20	-4.01	4.62	Neg.
2019	2.23	-0.65	2.93	-0.32	0.66	2.62	0.32	3.10	-1.01	0.37	-0.48	1.08	11.28	5.51	2.03
2020	0.87	-1.75	-2.21	0.19	0.12	0.19	1.59	0.03	-0.38	-1.03	2.11	1.49	1.14	5.28	0.22
2021	-0.25	0.19	2.01	1.67	1.21	0.70	1.83	0.65	-2.69	1.83	-1.95	1.35	6.61	6.00	1.10
2022	-1.73	-0.34	1.01	-0.30	-0.87	-0.81	0.06	-0.46	-1.28	0.38	0.21	-1.21	-5.24	2.65	Neg.
2023	1.41	-0.72	0.27										0.96	2.77	1.41

GS FICC and Equities as of April 3, 2023. Data ranging from 1Jan03 to 31Mar23. Backtested performance till 7th June 2019, realized thereafter. Performance figures of GSVOYGR are net of 50bps p.a. index fee. MSCI World (NDDUWI) is a live index published by MSCI Inc. US Treasury 7-10y (LT09TRUU) is a live index published by Bloomberg. S&P GSCI TR (SPGSCITR) is a live index published by S&P Dow Jones Indices. The "US 30/70 Equity-Bond" is tracking an excess return index (net of 50bps p.a index fee) rebalancing monthly to 30% of US Equity Futures Rolling Strategy Index (FRSIUSE) and 70% of US Government Bonds Futures Rolling Strategy Index (FRSIUSB). The indices are shown excess return by subtracting fed funds in order to make them comparable. Backtesting analysis/simulated results are for illustrative purposes only. GS provides no assurance or guarantee that the strategy will operate or would have operated in the past in a manner consistent with the above backtesting analysis. Official index levels of GSVOYGR are calculated by the calculation agent, Goldman Sachs & Co. LLC.

1. Calculated by dividing the annualized performance by the annualized realized volatility since 1 January 2003.
2. The largest percentage decline experienced in the relevant measure from a previously occurring maximum level.

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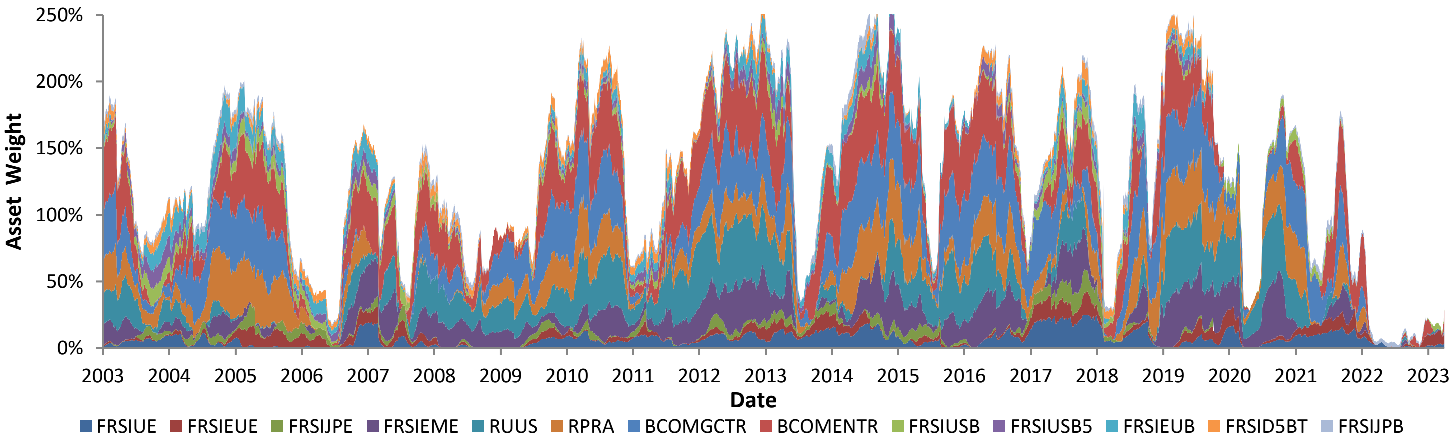
Performance of Individual Assets – In USD

Assets	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2023
US Equity	5.93%	-2.80%	3.20%										6.26%
European Equity	10.49%	2.04%	2.17%										15.19%
Japanese Equity	4.86%	1.34%	1.98%										8.37%
US 10Y Bonds	1.98%	-2.92%	2.92%										1.89%
US 5Y Bonds	1.22%	-2.38%	2.29%										1.07%
European 10Y Bonds	3.15%	-2.66%	3.04%										3.46%
European 5Y Bonds	1.56%	-1.62%	1.98%										1.89%
Japanese 10Y Bonds	1.12%	0.41%	2.37%										3.94%
EM Equity	8.88%	-7.82%	2.82%										3.19%
US Real Estate	10.20%	-5.12%	-2.93%										1.49%
European Real Estate	8.99%	-0.98%	-11.39%										-4.37%
Gold	5.61%	-5.57%	7.18%										6.88%
Energy	-10.03%	-3.60%	-7.32%										-19.61%

Strategy Weights[1] (post volatility control)

Asset Class	Name	Ticker	Weights (Mar-23)	Weights (Feb-23)	Change in Weight	Max Asset Weight
Equity	US Equity Futures Rolling Strategy Index	FRSIUSE	**3.52%**	3.28%	+0.2%	25%
	European Equity Futures Rolling Strategy Index	FRSIEUE	**6.76%**	9.68%	-2.9%	25%
	Japanese Equity Futures Rolling Strategy Index	FRSIJPE	**7.96%**	10.98%	-3.0%	25%
Fixed Income	US Government Bond Futures Rolling Strategy Index	FRSIUSB	**1.55%**	0.94%	+0.6%	50%
	US Government Bond Futures 5-Year Rolling Strategy Index	FRSIUSB5	**0.82%**	0.15%	+0.7%	50%
	European Government Bond Futures Rolling Strategy Index	FRSIEUB	**1.08%**	0.00%	+1.1%	50%
	German 5-Year Government Bond Futures Rolling Strategy Total Return Index	FRSID5BT	**1.92%**	0.00%	+1.9%	50%
	Japanese Government Bond Futures Rolling Strategy Index	FRSIJPB	**12.61%**	0.00%	+12.6%	50%
Emerging Markets	Emerging Markets Equity Futures Rolling Strategy Index	FRSIEME	**0.65%**	4.03%	-3.4%	25%
Alternatives	FTSE EPRA/NAREIT US Real Estate Total Return Index	RUUS	**0.59%**	2.01%	-1.4%	25%
	FTSE EPRA/NAREIT Developed Europe Real Estate Total Return Index	RPRA	**0.66%**	1.05%	-0.4%	25%
Commodities	Bloomberg Gold Subindex Total Return	BCOMGCTR	**6.16%**	6.43%	-0.3%	25%
	Bloomberg Energy Subindex Total Return	BCOMENTR	**0.00%**	0.00%	+0.0%	25%

Historical Weights[1] (post volatility control)



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[1] Excluding the cash allocation.

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