

TalkingPoints

S&P Leverage and Inverse Indices



Tianyin Cheng

Director
Strategy Indices
S&P Dow Jones Indices

Read more about the S&P Leverage and Inverse Indices and how they can be a useful benchmark for leverage and inverse products.

1. What are leverage and inverse indices and why are they important?

The S&P Leverage and Inverse Indices aim to replicate the daily performance of their underlying indices with a constant multiplicative factor, positive or negative, with or without embedded borrowing and lending costs. They offer market participants short-term trading tools for hedging and leveraging purposes. They also provide benchmarks for leverage and inverse products, such as leverage and inverse mutual funds, exchange-traded funds, exchange-traded notes, etc.

2. What are the underlying securities of leverage and inverse indices?

The S&P Leverage and Inverse Indices can measure equities and futures indices. Examples of possible underlying equity indices would include the S&P 500[®] and the Dow Jones Industrial Average[®].

The underlying futures indices could include equity futures indices, currency futures indices, commodity futures indices, and VIX[®] futures indices, such as the Dow Jones Industrial Average Futures Index, S&P U.S. Dollar Futures Index, S&P GSCI Crude Oil, and S&P 500 VIX Short-Term Futures Index.

3. What return types are there for leverage and inverse indices?

For equity-based leverage and inverse indices, the index return types follow the underlying indices and can be measured in price return, total return, or net total return.

For futures-based leverage and inverse indices, both excess return indices and total return indices are calculated. The difference in excess return and total return is explained in question 4.

4. What borrowing costs are embedded in leverage and inverse indices?

For equity-based leverage indices, the daily return consists of two components: (1) the return on the total position in the underlying index minus (2) the borrowing costs for the leverage.

For equity-based inverse indices, the daily return consists of two components: (1) the inverse of the underlying index return plus (2) the interest earned on both the initial investment and the proceeds from short selling the securities in the underlying index.

Indices typically use an overnight rate, such as the Overnight LIBOR in the U.S. or Eonia in Europe. Some assume a zero rate and are called carry-free indices. The same rate is assumed to be used for both lending and borrowing.

For futures-based leverage and inverse indices, the index excess return is the multiple of the underlying futures index's excess return. The total return additionally includes interest accrual on the notional value of the index, based on the 91-day U.S. Treasury Bond rate. These settings are typically used in futures-based indices.

5. What is the leverage ratio of a leverage or inverse index?

The leverage ratio is a constant that represents the leverage that an index takes at the opening of a particular trading day. When the leverage ratio is 2, each dollar invested provides USD 2 of exposure to the performance of the underlying index, which means 200% of the risk and volatility.

6. How frequently are leverage and inverse indices rebalanced?

The [S&P Leverage and Inverse Indices](#) typically rebalance on a daily basis. This allows the index to respond to the changes in the market every day the market is open. An index's exposure to its underlying index is reset to the correct multiples at the end of each trading day. While the daily rebalancing allows the indices to seek to magnify (or invert) the return of their underlying indices on a daily basis, returns for longer periods are a product of the compounded daily leveraged (or inverse) returns during the period.

7. Assuming zero borrowing costs, would a 2X leverage index return 10% if the underlying index returned 5% in a given month?

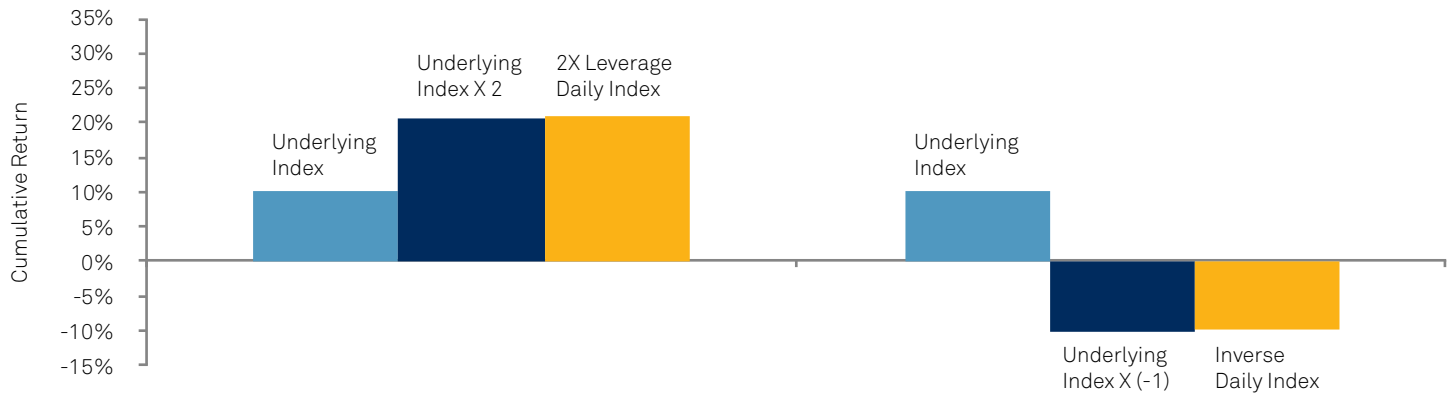
The indices' objective to seek an exposure of 200% is a daily objective and does not necessarily apply to longer periods of time. The actual longer-term performance may be close to the daily targets—but depending on certain market movements and due to the resetting of the leverage ratio back to 200% at market close, performance over time may vary.

In markets predominantly trending in one direction with low volatility, the performance for periods longer than one day may exceed the return of the index multiplied by 200%. However, in volatile markets, the pursuit of daily investment targets will typically have a negative impact on performance for periods longer than one day.

The scenarios in Exhibits 1-3 illustrate how a 2X leverage daily index and an inverse daily index perform in various market scenarios, assuming zero borrowing or lending costs. In a highly volatile market, such as scenario 3, returns could diverge significantly from what intuition tells.

Exhibit 1: Market Rises Steadily

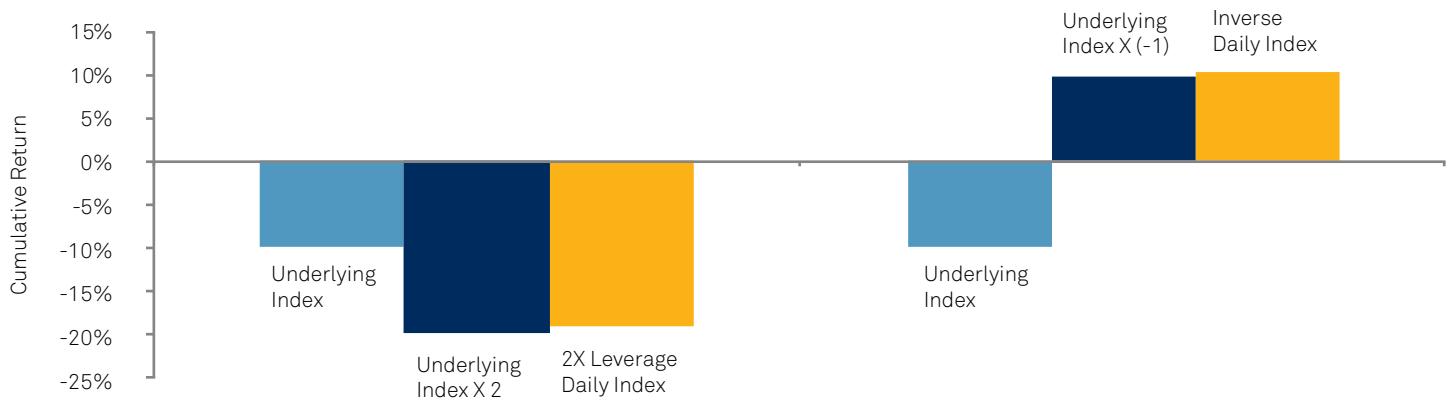
Time Period and Return	Underlying Index	2x Leverage Daily Index	Inverse Daily Index
First Day (%)	5	10	-5
Second Day (%)	5	10	-5
Cumulative Return	$(1 + 5\%) * (1 + 5\%) - 1 = 10.25\%$	$(1 + 10\%) * (1 + 10\%) - 1 = 21\%$	$(1 - 5\%) * (1 - 5\%) - 1 = -9.75\%$
Cumulative Return * 2 (%)	20.5	-	-
Cumulative Return x - 1 (%)	-10.25	-	-



Source: S&P Dow Jones Indices LLC. Chart and table are provided for illustrative purposes. *The Underlying Index, Underlying Index X 2, 2X Leverage Daily Index, Underlying Index X (-1), and Inverse Daily Index are hypothetical portfolios.

Exhibit 2: Market Declines Steadily

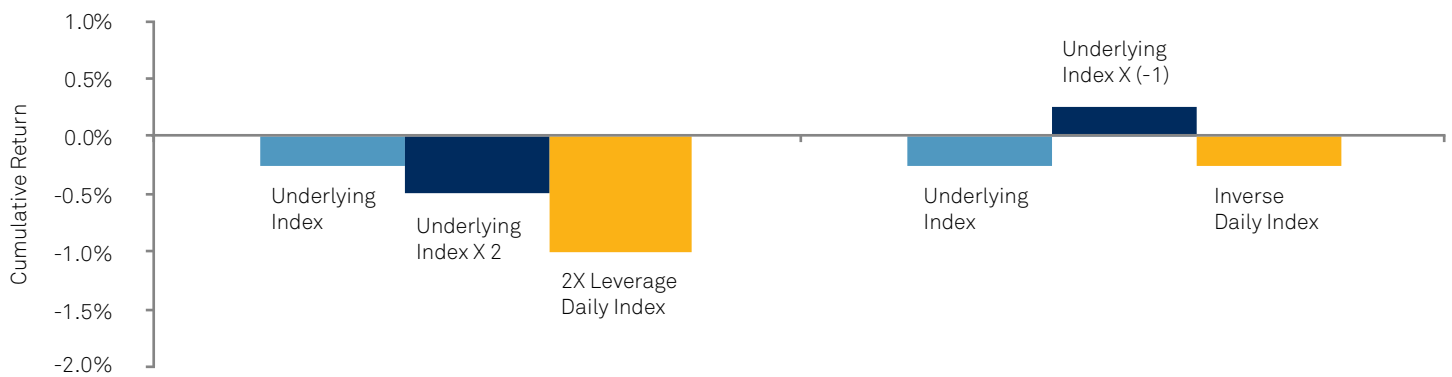
Time Period and Return	Underlying Index	2x Leverage Daily Index	Inverse Daily Index
First Day (%)	-5	-10	5
Second Day (%)	-5	-10	5
Cumulative Return	$(1 - 5\%) * (1 - 5\%) - 1 = -9.75\%$	$(1 - 10\%) * (1 - 10\%) - 1 = -19\%$	$(1 + 5\%) * (1 + 5\%) - 1 = 10.25\%$
Cumulative Return * 2 (%)	-19.50	-	-
Cumulative Return x - 1 (%)	9.75	-	-



Source: S&P Dow Jones Indices LLC. Chart and table are provided for illustrative purposes. *The Underlying Index, Underlying Index X 2, 2X Leverage Daily Index, Underlying Index X (-1), and Inverse Daily Index in this exhibit are hypothetical portfolios.

Exhibit 3: Market Is Flat, but Volatile

Time Period and Return	Underlying Index	2x Leverage Daily Index	Inverse Daily Index
First Day (%)	5	10	-5
Second Day (%)	-5	-10	5
Cumulative Return	$(1 + 5\%) * (1 - 5\%) - 1 = -0.25\%$	$(1 + 10\%) * (1 - 10\%) - 1 = -1\%$	$(1 + 5\%) * (1 - 5\%) - 1 = -0.25\%$
Cumulative Return * 2 (%)	-0.50	-	-
Cumulative Return x - 1 (%)	0.25	-	-



Source: S&P Dow Jones Indices LLC. Chart and table are provided for illustrative purposes. *The Underlying Index, Underlying Index X 2, 2X Leverage Daily Index, Underlying Index X (-1), and Inverse Daily Index in this exhibit are hypothetical portfolios.

8. What Leverage and Inverse Indices Are Available from S&P Dow Jones Indices?**Exhibit 4: S&P Leverage and Inverse Indices**

Index Category	Index Family
Leverage and Inverse Indices Based on Equities With Carry	S&P 500 Leverage and Inverse Daily Indices
	Dow Jones Industrial Average Leverage and Inverse Daily Indices
Leverage and Inverse Indices Based on Equities That Are Carry Free	S&P 500 Leverage and Inverse Carry-Free Daily Indices
	Dow Jones Industrial Average PR Leverage and Inverse Carry-Free Daily Indices
	S&P MidCap 400® Leverage and Inverse Daily Indices
Leverage and Inverse Indices Based on Equity Futures	Dow Jones Industrial Average Futures Leverage and Inverse Daily Indices
	S&P U.S. Dollar Futures Leverage and Inverse Daily Indices
	S&P Japanese Yen Futures Leverage and Inverse Daily Indices
	S&P Australian Dollar Futures Leverage and Inverse Daily Indices
Leverage and Inverse Indices Based on Currency Futures	S&P Euro Futures Leverage and Inverse Daily Indices
	S&P/TAIFEX RHF RMB Leverage and Inverse Daily Indices
	S&P/TAIFEX RTF RMB Leverage and Inverse Daily Indices

Source: S&P Dow Jones Indices LLC. Indices available as of March 25, 2020. Table is provided for illustrative purposes.

Exhibit 4: S&P Leverage and Inverse Indices (cont.)

Index Category	Index Family
Leverage and Inverse Indices Based on Commodity Futures	Dow Jones Commodity Index Brent Crude Leverage and Inverse Indices
	Dow Jones Commodity Index Crude Oil Leverage and Inverse Daily Indices
	Dow Jones Commodity Index Gold Leverage and Inverse Daily Indices
	Dow Jones Commodity Index Silver Leverage and Inverse Daily Indices
	Dow Jones Commodity Index North America Copper Leverage and Inverse Daily Indices
	Dow Jones Commodity Index Corn Leverage and Inverse Daily Indices
	S&P GSCI Brent Crude Leverage and Inverse Daily Indices
	S&P GSCI Crude Oil Leverage and Inverse Daily Indices
	S&P GSCI Gold Leverage and Inverse Daily Indices
	S&P GSCI Silver Leverage and Inverse Daily Indices
	S&P GSCI Capped Commodity Inverse Daily Indices
	S&P GSCI Industrial Metals 1-Month Forward Capped Commodity Inverse Daily Indices
	S&P GSCI Agriculture & Livestock 1-Month Forward Capped Component Inverse Daily Indices
	S&P GSCI Energy 1-Month Forward Capped Commodity Inverse Daily Indices
S&P GSCI Agriculture Select Inverse Daily Indices	
Leverage and Inverse Indices Based on VIX Futures	S&P 500 VIX Short-Term Futures Inverse Daily Indices

Source: S&P Dow Jones Indices LLC. Indices available as of March 25, 2020. Table is provided for illustrative purposes.

General Disclaimer

Copyright © 2020 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, a division of S&P Global ("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.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.