J.P. Morgan Global Inflation 1-10 Year Tilted Index

Index Methodology and Profile

Highlights

The J.P. Morgan Global Inflation 1-10 Year Tilted Index aims to track the performance of local currency denominated inflation-linked government bonds issued by a fixed list of 12 developed markets, namely Australia, Canada, Denmark, France, Germany, Italy, Japan, Spain, Sweden, United Kingdom, and United States. The index applies a weight tilt toward issuers ranked higher based on J.P. Morgan Screened, Tilted and Reweighted (JSTAR) scores, and underweight issuers that rank lower. The returns and statistics are available since March 2011.

Global Index Research

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Index Criteria

Minimum Issue Size	Minimum issue size (non- inflation adjusted) are set of all local currency markets: • AUD: 700 million • CAD: 600 million • DKK: 5 billion • EUR: 500 million • GBP: 500 million • JPY: 50 billion • NZD: 1 billion • SEK: 4 billion • USD: 500 million
Instrument Type	**Includes:** Eligible local currency government bonds must be capital-indexed and linked to a commonly used domestic inflation index **Excludes:** Nominal, Floating-rate, non-government inflation-linked bonds
Maturity	Remaining maturity must be more than 1 year and less than 10 years at the time of monthly rebalance*
Credit Quality Classification	Countries must be rated investment grade (i.e. minimum BBB- or equivalent rating) using the middle rating of the three rating agencies (S&P, Moody's and Fitch); when ratings are available from only two agencies, the lower is used; when ratings are available from only one agency, that rating is used.

* Effective January 29, 2021, J.P. Morgan fixed income indices retain bonds until 6-month remaining to maturity following the 2020 index consultation. Prior to that, bonds were retained until 12-month remaining to maturity.

See page 8 for important disclosures.

Index Characteristics and Methodology

Pricing	Mid prices are taken from a third party pricing source, PricingDirect
Aggregate Return	Weighted average of bond returns using mid prices
Rebalancing	Rebalances on the last weekday of the month. If FX rates from Refinitiv (WM Reuters) are unavailable on the last weekday of the month (i.e. Good Friday), indices are rebalanced on the previous business day.
Coupon Reinvestment	Immediately reinvested into the respective local market returns
FX Rates	All FX rates used for hedged/unhedged returns are as of 4pm London time provided by Refinitiv (WM Reuters)
Weighting	Market capitalization based weighting, subject to tilts based on JSTAR scores.
Price Timing	As of the local market close
Settlement Convention	Local market country convention
Holiday Calendar	Local market calendar
Bloomberg Ticker (USD Unhedged)	JPILGLTL Index

JSTAR Score-Based Tilt Methodology

The J.P. Morgan Global Inflation 1-10 Years Tilted Index applies J.P. Morgan Screened, Tilted and Reweighted (JSTAR) issuer scores to adjust the weights of index constituents from the respective baseline indices. The JSTAR index scores are an amalgamation of Verisk Maplecroft and Sustainalytics on an equal weight basis. The scores range from 0 - 100, with 100 classified as the best possible score. The JSTAR scores are divided into twelve bands that are used to scale each issuer's baseline index weight.

Please note that this index incorporates a custom version of the flagship J.P. Morgan Screened, Tilted and Reweighted (JSTAR) Methodology. For details on the ESG providers, scoring methodology, green bond treatment and exclusions, please refer to the sovereign methodology detailed within the J.P. Morgan Screened, Tilted and Reweighted (JSTAR) Methodology.

ESG Providers	Sustainalytics Verisk Maplecroft* Climate Bonds Initiative
JSTAR Scoring Methodology	A simple average of each country's Verisk Maplecroft and Sustainalytics score is taken to produce the final JSTAR index score.
JSTAR Integration Methodology	The JSTAR scores are divided into twelve bands that are used to scale each issuer's baseline index weight. There are no exclusions of issuers the index based on JSTAR scores. JSTAR bands are rebalanced on a quarterly basis, during the month-end rebalancing in January, April, July, and October.

* Effective July 31, 2023, the Maplecroft Sovereign ESG Ratings replace the RepRisk Country RRI as an input in the calculation of the sovereign JSTAR scores. For history of rule changes in the JSTAR methodology, please refer to J.P. Morgan Screened, Tilted and Reweighted (JSTAR) Methodology (link).

Instrument Type

Only local currency denominated domestic inflation linked government instruments are included. Nominal, floating-rate and capitalization, amortizing bonds or bonds with callable, puttable or convertible features are not part of the indices.

Liquidity

A key feature that distinguishes our indices from other index products is the strict enforcement of liquidity criteria in the selection of instruments. Yet, while the notion of liquidity differs from market to market, J.P. Morgan indices include only securities, subject to several considerations including but not limited to:

- Pricing: Bonds must trade with enough frequency to prevent stale price quotations • Availability: Bonds must be regularly traded in size at acceptable bid-offer spreads and readily redeemable for cash. A reasonable two-way market must exist for the instrument to be included in the index portfolio.
- Replication costs: Investors should be able to replicate the index without incurring excessive transaction costs.

Bond Calculations

Calculations are according to market convention: all calculations including accrued interest, duration, yield, etc., are done according to local market convention using parameters (ex-dividend rules, settlement conventions, etc.) relevant to each specific bond. All calculations are gross of tax and ignore transactions costs.

Bond pricing: Pricing for our underlying instruments is provided on a daily basis from Pricing Direct, a third party valuation vendor. In the event the primary source for pricing is unable to provide a quote, the Index Group reserves the right to consider the use of an appropriate alternative source for index inputs. Please see http://www.pricing-direct.com for further details.

Ex-dividend rules: ex-dividend rules, when applicable, are incorporated into accrued interest calculations, as appropriate, by country. Ex-dividend rules define the last day a bondholder must own a bond in order to receive that bond's next coupon payment, otherwise known as the ex-dividend date.

- During the period between the ex-dividend date and the coupon date, the bond trades "exdividend"
- An investor who purchases a bond for settlement between the ex-dividend date and coupon date will not receive that bond's next coupon payment
- During this period, according to market convention, accrued interest becomes negative resulting in a total price at a discount to the clean price and in effect, compensating the investor for the time the bond will be held without interest
- On coupon date, interest will start to accrue for the subsequent coupon payment

Returns and return indices: return indices on individual bonds are calculated on a daily basis and measure bond performance over time:

- Total return index is based on changes in both clean price and accrued interest

At the individual bond level focus is on total return.

Reinvestment of coupons: the J.P. Morgan indices are always fully invested. All coupons received are immediately reinvested back into the local market.

Interest accruals: interest is accrued starting from the bond's dated date up to the first coupon value date. Accrued interest is calculated according to market convention, on a settlement day basis. Interest is accrued by value or settlement date. Weekly, seven days of interest are accrued, including the weekend.

In markets with ex-dividend rules, if a bond is purchased after the ex-dividend date the purchaser will not receive the bond's next coupon. In order to compensate the buyer of the bond, the price paid for the bond must be less than the clean market price, thus, accrued interest will be negative.

Coupon value date: The coupon value date is the trade date associated with settlement on coupon date (the day the coupon is paid). Thus, the coupon value date is the last trade date which an investor may purchase a bond and have that bond settle prior to payment of the subsequent coupon. On coupon value date, accrued interest resets to zero, and accruals begin towards the next coupon.

Yield: effective annual rate of return, expressed as a percentage. For the J.P. Morgan GBI Inflation Index body of data, yields are all calculated as yield- to-maturity, which is the discount rate that the present value of future payments equals the price of the security.

Index calculations

The base for the index level is: March 1, 2011 = 100.

The index rebalances on the last weekday of each month. Bonds comprising the indices are required to have more than 1 year and less than 10 year to remaining to maturity on rebalance day for inclusion in the index.

If FX rates from WM Reuters are unavailable on the last weekday of the month (i.e. Good Friday), indices are rebalanced on the previous business day.

The index is weighted by the component countries' aggregate normalized market capitalization (dirty price times par outstanding) which are scaled to apply tilt based on JSTAR score of each country to the extent that for any country in the index, absolute difference between weight in final index and market cap based weight, cannot exceed 5% .

Effective Jan. 30, 2026, in addition to a 5% maximum change with respect to market cap-based weights, each country weight due to the tilt based on JSTAR Scores cannot exceed 2.1 times its market cap-based weight. The weights change monthly on the month-end rebalance day, and those weights remain active for the remainder of that month.

Note: from Nov. 30, 2022 through Jan. 30, 2026, each country weight was constrained to not exceed 2x its market cap-based weight.

Accrued interest is assigned to the bonds in the index according to the specific convention of each country's market, and this interest is settlement adjusted.

Daily indicative pricing for each security and FX rate is closely scrutinized and are reconciled using market movements and other pricing sources as guidance. As necessary, an established alternate source will be used to maintain the integrity of daily index calculations. On any given calculation day, if the primary source is unable to provide a quote, the Index Group reserves the right to consider the use of an appropriate alternate source for index inputs, such as pricing and FX. If a permanent switch for the primary third party pricing source is necessary, clients will be notified in advance prior to any official switch.

Appendix A: Bond Total Return Methodology

A. Standard Case

The total return for an individual bond between days (t-1) and (t) is calculated as shown below:

$$Total\ Return_t = \left(\frac{P_t + A_{v(t)}}{P_{t-1} + A_{v(t-1)}}\right) * \left(\frac{IF_t}{IF_{t-1}}\right) - 1$$

Total Return	Total return value on day t, incorporating both principal and interest
Pt	Local market closing clean pricing of a bond on day t
Av(t)	Accrued interest for a bond on day t; it is calculated up to, but excluding the value date v(t)
t	Current market day
t-1	Previous market day determined by the market's holiday calendar

Inflation Factor is calculated for each bond, based upon the ratio of the current reference index to the reference index at issuance.

$$IFt = refIndex(t)/refIndex(0)$$

Accrued interest for a bond is based on the following formula:

$$A_{V(t)} = \left(\frac{C_{v(t)} \times d_{v(t)}}{d_y}\right)$$

$C_{v(t)}$	Next coupon to be paid on a bond after the value date v(t)
$d_{v(t)}$	Number of days of accrued interest used to calculate : it can be zero or negative
d_y	Number of days in a year according to a bond's day count convention

Total return indices for individual bonds are calculated as shown below:

$$Index_t = Index_{t-1} \times Total\ Return_t$$

$Index_t$	Index value on day t

B. On Coupon Value Date

On coupon value date, the accrued interest for specific bond is reset to zero. On that date, the coupon value will be added into calculation of the total return and the associated index.

$$Total\ Return_t = \left(\frac{P_t + C_{v(t)}}{P_{t-1} + A_{v(t-1)}}\right) * \left(\frac{IF_t}{IF_{t-1}}\right) - 1$$

$$Index_t = Index_{t-1} \times \left(\frac{P_t + C_{v(t)}}{P_{t-1} + A_{v(t-1)}}\right) * \left(\frac{IF_t}{IF_{t-1}}\right)$$

Appendix B: Bond Yield Methodology

Calculation of yield to maturity in the GBI indices is a two-step process. First, the following equation is solved iteratively for the discount rate (r):

$$\mathrm{P} + A = \sum_{n}^{i=1} \left(\frac{C_i}{b}\right) \times [1 - \Sigma f_k] \times r^{t_i} + \sum f_i R_i \times r^{t_i} + f_F \times (R_F + A_F) \times r^{t_F}$$

P	Clean Price
A	Accrued interest through the value date
r	Discount rate
d_t	Number of days from settlement to coupon payment i (final payment if i = F)
d_y	Number of days in the year
t_i	Time to the ith cash flow expressed in coupon periods
N	Number of coupon payments left
F	Indicator for final redemption if F>N (else, ignore this term)
C_i	Annual coupon rate in the ith period (percentage of face value)
f_i	Fraction of current amount outstanding redeemed on the ith coupon payment date (or on the final redemption date if i = F)
R_i	Redemption price on the ith coupon payment date (or on the final payment date if i = F)
A_F	Additional accrued interest from the final coupon date N to the final redemption date F

Once the discount factor is obtained, the true yield is calculated as follows:

$$Yield = 100 + \left[\frac{1^{\left(\frac{1}{b}\right)}}{r} - 1\right] \times b$$

b	Basis of yield quote (b=1= annual, b=2= semi-annual, etc.)

Appendix C: Total Return Calculation Methodology

Total return for a portfolio of bonds between days (t-1) and (t) is calculated as shown below:

$$Total\ Return_t = \sum_{n=1}^{bonds} \left[\left(\left(\frac{P_{n_t} + A_{n_{v(t)}} \langle if\ A_{v(t)} < A_{v(t-1)} \rangle + C_{v(t)}}{P_{n(t-1)} + A_{n_{v(t-1)}}} \right) - 1 \right) * \left(\frac{IF_{n_t}}{IF_{(t-1)}} \right) * Weight_{n_{t-1}} \right]$$

The total return index is calculated as shown below:

$$T.R.Index_t = T.R.Index_{t-1} * \ Total\ Return_t$$

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n	Indicates a given bond within the market portfolio. "n" moves from 1 to "bonds," with "bonds" being the last bond in the portfolio.
t	Current market day
t-1	Previous market day determined by the market's holiday calendar
P_{n_t}	Local market closing clean price of a bond n on day t
$A_{n_{v(t)}}$	Accrued interest for a bond n on day t; it is calculated up to, but excluding the value date v(t)
$C_{v(t)}$	Next coupon to be paid on a bond after the value date v(t)
Weight	Bond level weight
$\langle if\ A_{v(t)} < A_{v(t-1)} \rangle$	Equals 1 if the boolean expression is true; otherwise, it equals zero. This boolean will be true when t is equal to coupon value date and accrued interest is reset to zero.
Total Return_t	Total return value on day t, incorporating both principal and interest
Index_t	Index value on day t

For any questions or for additional information, please contact index.research@jpmorgan.com.

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