

Parameta Solutions Indices

USD Interest Rate Swap Volatility Indices

Parameta Solutions USD Interest Rate Swap Volatility (USD IRSV) indices aim to provide market participants with a forward looking implied volatility measure for the USD interest rate swap markets.

Background

Interest rate swaps are an important tool for fixed income market participants, chiefly as they reflect the market's expectation of future interest rates. They are used by corporate treasurers, speculators, investors, and banks in a variety of use cases in portfolio management, financing, risk management, and investment strategies. According to ISDA¹, total notional outstanding for Interest Rate Derivatives (IRD) reached \$573.7 trillion and accounted for 80.3% of global OTC derivatives notional outstanding as of end-June 2023. Interest rate swaps notional outstanding hit \$465.9 trillion accounting for 81.2% of total IRD notional outstanding at end-June 2023.

Index Description

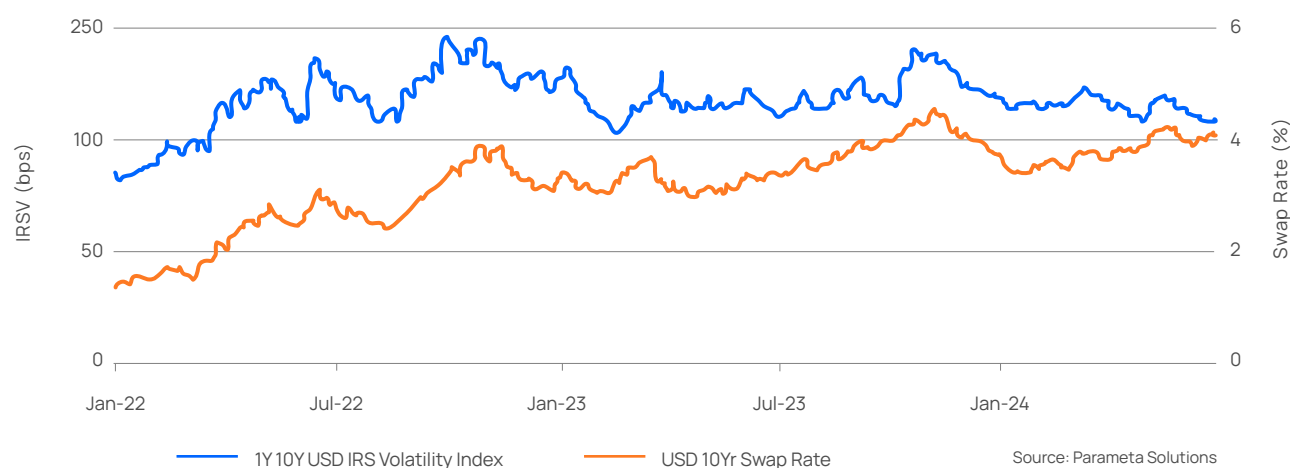
The Parameta Solutions USD Interest Rate Swap Volatility (USD IRSV) indices aim to provide market participants with a model free measure of spot implied volatility in the U.S. interest rate swap markets. Derived from interest rate swaption prices, an index is available for each of the 48 most liquid option expiry, swap tenor combinations. Each index distills the information content of up to 18 different at-the-money (ATM) and out-of-the-money (OTM) payer and receiver strikes into a single measure of implied volatility for each option expiry/swap tenor combination.

Accurate volatility forecasts are important for investors, both when making investment decisions and when measuring investment risks. Simple volatility measures implied from ATM option prices fail to capture all available information from option markets. To address this, recent research advocates deriving implied volatility in a model-free manner from both ATM and OTM call and put options. A recent BIS working paper² found that predictions of interest rate swap volatility based on model-free implied volatility have superior predictive power over other commonly used volatility forecasting measures.

Index Objective and Key Features

- Indices are available for 48 of the most liquid option expiry swap tenor combinations from the USD interest rate option markets.
- The objective of each index is to provide an indication of the expected volatility of the index swap rate tenor over the index option expiry period.
- IRSV indices distil the information content of ATM and OTM interest rate swaptions into a single measure of implied volatility for each index.
- Model-free volatility estimates are widely accepted to have superior predictive power compared to other forecasting measures².

Recent History of USD 1Y10Y Volatility Index



¹ <https://www.isda.org/a/5ihgE/Key-Trends-in-the-Size-and-Composition-of-OTC-Derivatives-Markets-in-the-First-Half-of-2023.pdf>

² <https://www.bis.org/publ/work1068.pdf>

Indices Available

The following indices are available directly from Parameta Solutions. Indices can also be viewed on Bloomberg using the tickers below or from page PMET.

USD IRSV Indices		Swap Tenor (T in years)					
		01Y	02Y	05Y	10Y	20Y	30Y
Option Expiry	01M	PSVRD1IIB	PSVRD1KIB	PSVRD1VIB	PSVRD1XIB	PSVRD1UIB	PSVRD1YIB
	03M	PSVRD3IIB	PSVRD3KIB	PSVRD3VIB	PSVRD3XIB	PSVRD3UIB	PSVRD3YIB
	06M	PSVRD6IIB	PSVRD6KIB	PSVRD6VIB	PSVRD6XIB	PSVRD6UIB	PSVRD6YIB
	01Y	PSVRDIIB	PSVRDIKIB	PSVRDIVIB	PSVRDIXIB	PSVRDIUIB	PSVRDIYIB
	02Y	PSVRDKIB	PSVRDKKIB	PSVRDKVIB	PSVRDKXIB	PSVRDKUIB	PSVRDKYIB
	03Y	PSVRDLIB	PSVRDLKIB	PSVRDLVIB	PSVRDLXIB	PSVRDLUIB	PSVRDLYIB
	05Y	PSVRDVIB	PSVRDVKIB	PSVRDVVIB	PSVRDVXIB	PSVRDVUIB	PSVRDVYIB
	10Y	PSVRDXIB	PSVRDXKIB	PSVRDXVIB	PSVRDXXIB	PSVRDXUIB	PSVRDXYIB

Calculation Methodology

The index calculation methodology is based on published academic research³ which provides a theoretical foundation for measuring interest rate swap volatility based on the model-free fair value of variance swap contracts for forward swap rates.

Each index is derived from the following inputs:

- Swaption ATM mid-price premium
- Swaption ATM normal volatility
- Swaption skew mid-price premia across the following payer and receiver strikes 400, 300, 200, 150, 100, 75, 50 and 25 for the specified option expiry and swap tenor.

For more information on the calculation methodology please [contact us](#).

Additional Information

- The price source for the USD IRSV indices is the ICAP US Interest Rate Options Desk.
- USD IRSV indices are published at or around 5PM EST time based on closing prices as at 4.15PM.
- A business day for USD IRSV means a day on which banks are open in the US and the ICAP Interest Rate Options Desk publishes prices.
- The inception date for the majority of USD IRSV indices is 03 Jan 2017.

³ Mele, Antonio & Obayashi, Yoshiki. (2015). The Price of Fixed Income Market Volatility. 10.1007/978-3-319-26523-0_3

Get in touch

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