

EUR Interest Rate Swap Volatility Indices

Parameta Solutions EUR Interest Rate Swap Volatility (EUR IRSV) indices aim to provide market participants with a forward looking implied volatility measure for the EUR 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 EUR Interest Rate Swap Volatility (EUR IRSV) indices aim to provide market participants with a model-free measure of spot implied volatility in the Euro 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 24 different ATM and 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 at-the-money (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 out-of-the-money (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 EUR 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 distill 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 EUR 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

EUR IRSV Indices	Swap Tenor (T in years)						
	01Y	02Y	05Y	10Y	20Y	30Y	
Option Expiry	01M	PSVRE1IB	PSVRE1KB	PSVRE1VB	PSVRE1XB	PSVRE1UB	PSVRE1YB
	03M	PSVRE3IB	PSVRE3KB	PSVRE3VB	PSVRE3XB	PSVRE3UB	PSVRE3YB
	06M	PSVRE6IB	PSVRE6KB	PSVRE6VB	PSVRE6XB	PSVRE6UB	PSVRE6YB
	01Y	PSVREIIB	PSVREIKB	PSVREIVB	PSVREIXB	PSVREIUB	PSVREIYB
	02Y	PSVREKIB	PSVREKKB	PSVREKVB	PSVREKXB	PSVREKUB	PSVREKYB
	03Y	PSVRELIB	PSVRELKB	PSVRELVB	PSVRELXB	PSVRELUB	PSVRELYB
	05Y	PSVREVIB	PSVREVKB	PSVREVVb	PSVREvXB	PSVREVUB	PSVREvYB
	10Y	PSVREXIB	PSVREXKB	PSVREXVB	PSVREXb	PSVREXUB	PSVREXYB

Calculation Methodology

The index calculation methodology is based on 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 1000, 500, 400, 300, 200, 150, 100, 75, 50, 25, 12.5 for the specified option expiry and swap tenor.

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

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

Additional Information

- The price source for the EUR IRSV indices is the ICAP EMEA Interest Rate Options Desk
- IRSV indices are published at or around 5PM UK time based on closing prices as at 4.15PM
- A business day for IRSV means a day on which banks are open in the UK and the ICAP Interest Rate Options Desk publishes prices
- The inception date for the majority of EUR IRSV indices is 03 Jan 2011

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