

# Equity Quarterly Roll Analyzer

## GUIDE TO GETTING STARTED

Each quarter during the roll period, CME Group's Equity Quarterly Roll Analyzer is populated with the current futures calendar spread market information to help you track the progress of the roll market.

The analyzer will typically begin to populate on the Monday three weeks prior to the quarterly Friday contract expiration date<sup>1</sup>.

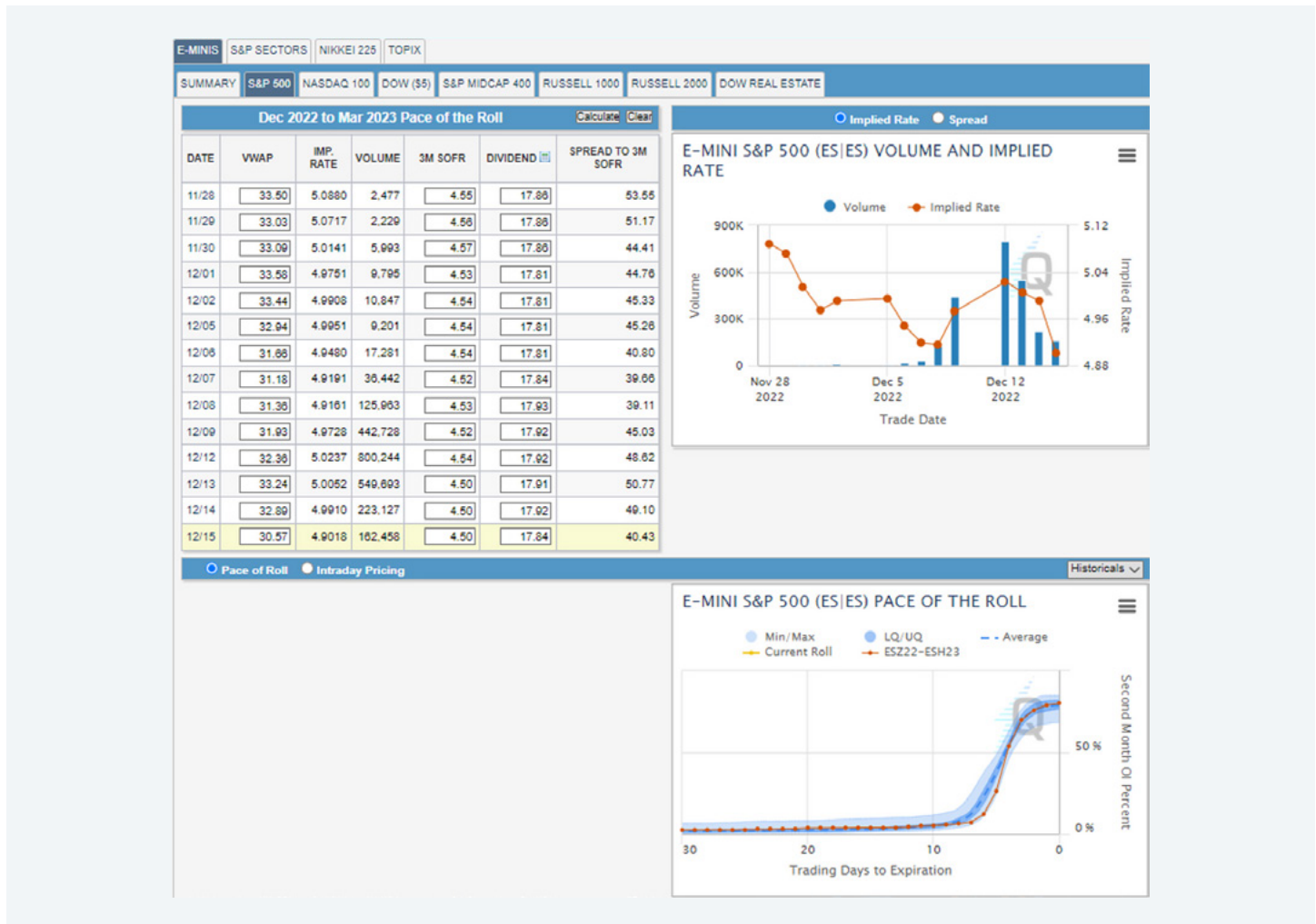
To access the tool, visit [CMEGroup.com/rollpace](http://CMEGroup.com/rollpace) and complete the registration form. The home screen default view shows Volume Weighted Average Price (VWAP) and average implied financing rate for E-mini Index futures for broad market indexes each day.

Tabs across the top allow you to toggle between similar views for E-mini S&P Select Sector futures, Nikkei 225, and TOPIX futures.

E-MINIS														
S&P SECTORS														
NIKKEI 225														
TOPIX														
SUMMARY														
S&P 500														
NASDAQ 100														
DOW (\$5)														
S&P MIDCAP 400														
RUSSELL 1000														
RUSSELL 2000														
DOW REAL ESTATE														
DATE	E-MINI S&P 500 (ES)		E-MINI NASDAQ 100 (NQ)		E-MINI DOW (YM)		E-MINI S&P MIDCAP 400 (EMD)		E-MINI RUSSELL 1000 (RS1)		E-MINI RUSSELL 2000 (RTY)		DOW REAL ESTATE (RXX)	
	VWAP	IMP. FIN.	VWAP	IMP. FIN.	VWAP	IMP. FIN.	VWAP	IMP. FIN.	VWAP	IMP. FIN.	VWAP	IMP. FIN.	VWAP	IMP. FIN.
11/30	-8.54	0.72	-5.27	0.58	-99.55	0.70	0.00	0.00	0.00	0.00	-2.59	0.57	0.00	0.00
12/01	-8.44	0.72	-4.42	0.59	-102.00	0.66	0.00	0.00	0.00	0.00	-2.80	0.57	0.00	0.00
12/02	-7.89	0.78	-3.47	0.62	-98.68	0.71	0.00	0.00	0.00	0.00	-2.49	0.63	0.00	0.00
12/03	-7.74	0.80	-5.37	0.56	-127.11	0.33	0.00	0.00	0.00	0.00	-3.08	0.49	0.00	0.00
12/04	-7.74	0.79	-3.86	0.61	-103.66	0.64	0.00	0.00	0.00	0.00	-2.33	0.64	0.00	0.00
12/07	-8.10	0.74	-2.65	0.64	-98.95	0.70	-4.67	0.52	0.00	0.00	-2.36	0.63	0.00	0.00
12/08	-8.08	0.77	-2.25	0.65	-97.46	0.72	-3.82	0.67	0.00	0.00	-2.21	0.66	0.00	0.00
12/09	-8.13	0.78	-1.92	0.67	-97.07	0.72	-3.69	0.68	0.00	0.00	-2.02	0.69	0.00	0.00
12/10	-8.00	0.80	-1.47	0.69	-96.73	0.73	-3.52	0.72	0.00	0.00	-1.76	0.75	0.00	0.00
12/11	-7.66	0.84	-0.51	0.72	-97.00	0.73	-3.65	0.70	0.00	0.00	-1.34	0.83	0.00	0.00
12/14	-6.89	0.92	4.16	0.66	-87.32	0.85	-2.67	0.88	-3.45	0.90	-1.03	0.90	0.00	0.00
12/15	-6.89	0.92	6.56	0.93	-84.52	0.89	-2.69	0.87	-3.19	0.95	-0.80	0.94	0.00	0.00
12/16	-7.13	0.88	3.36	0.82	-91.31	0.79	-2.40	0.92	-3.22	0.93	-1.29	0.83	0.00	0.00
12/17	-8.13	0.77	1.58	0.76	-93.65	0.77	-3.16	0.78	0.00	0.00	-2.37	0.62	0.00	0.00

<sup>1</sup> Note: Nikkei 225 and TOPIX futures expire one week prior to other Equity products featured within the tool

Navigation within each grouping – E-minis, S&P Sectors, Nikkei 225, TOPIX – allow you to drill down into product-specific pages. Click to toggle between pages within the sub-navigation. To return to the summary page, simply click on the Summary tab again.



Each product-specific page is divided into four quadrants. To show the pace of a prior period, use the "Historicals" drop-down in the middle-right of the grid.

- **The top-left quadrant** presents a numerical summary for VWAP, implied financing rate, roll volume, the 3M SOFR<sup>2</sup> benchmark assumption<sup>3</sup>, forward dividend point assumption, and the implied financing rate as a spread to 3M SOFR.
- **The top-right quadrant** shows the implied financing rate and roll volume over the coverage period. You can toggle between the implied financing rate and the rate spread vs. 3M SOFR.
- **The bottom two quadrants** show the pace of the roll for both the standard-sized contract (on the left, if it exists) and the E-mini contract (on the right). The solid red line represents the current percentage Open Interest (OI) in the deferred month as of a particular date. The solid black line represents the historical average of the same quantity over the last three years at the same point in the roll period. The blue shade covers the middle 75% range of the data from the last three years.

The Trading Days to Expiration on the horizontal axis represent the final days that the contract will trade prior to the roll. While Friday is the contract expiration date, "0" represents the last full day that the contract will actively trade (e.g., Thursday).

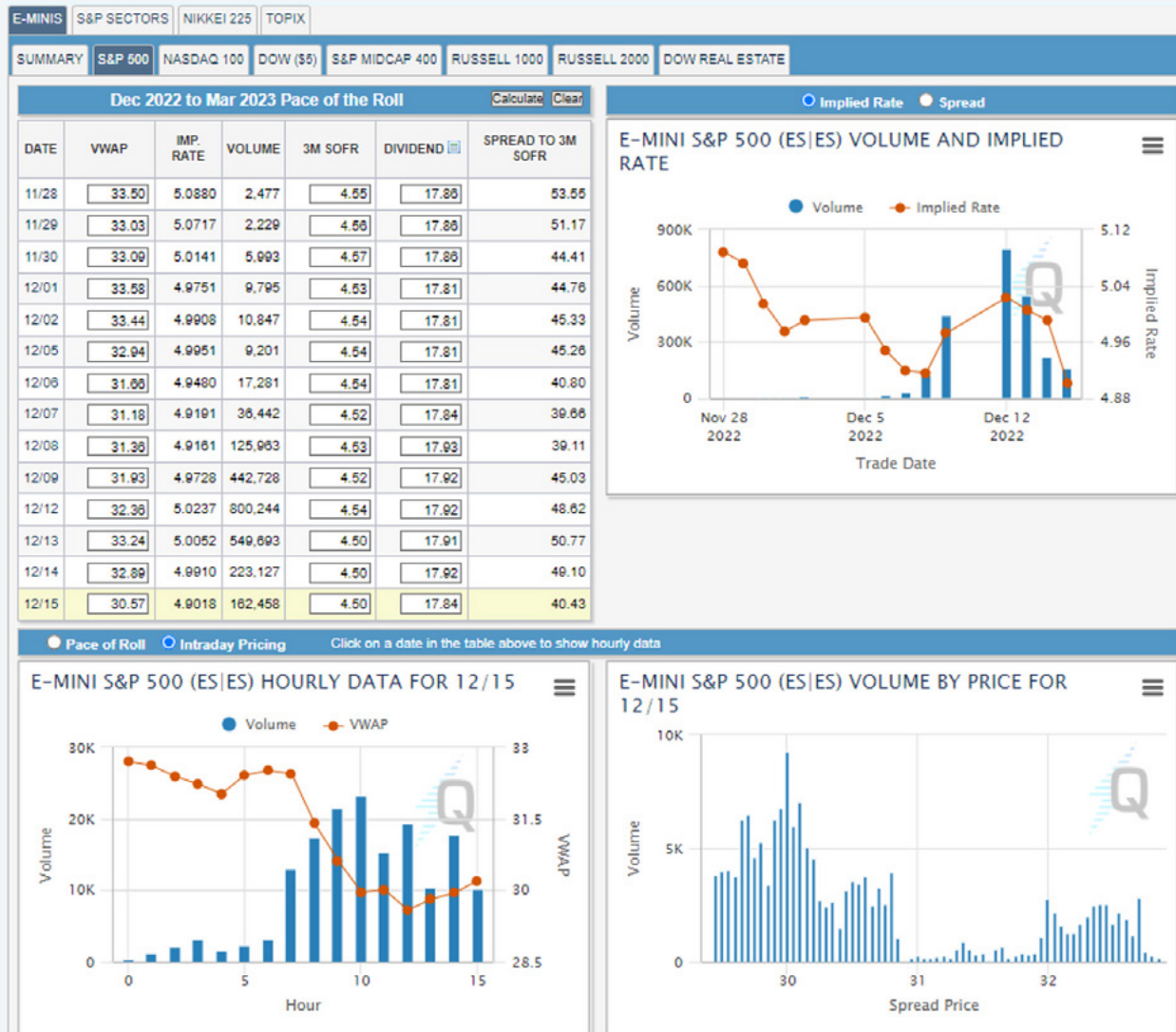
The drop-down box immediately above the E-mini Pace of the Roll chart allows you to display to the roll charts from prior periods. Likewise, the buttons on the left allow you to toggle between roll charts and some intra-day pricing data. In the top right corner of each chart, there is a maximize/minimize icon for switching the chart between full screen width and default width.

<sup>2</sup> 3M SOFR in this guide represents the interest rate implied by the CME Group Three-Month SOFR futures with the corresponding contract month.

<sup>3</sup> Beginning with the Q4 2022 roll period, the Equity Quarterly Roll Analyzer Tool began using Three-Month SOFR benchmark (instead of Three-Month LIBOR).

## Intra-day Data

If you toggle to intra-day data, the VWAP and roll volume by the hour is shown in the bottom left quadrant, while the volume by price appears in the bottom right quadrant. To select a different date, click on the row in the top left quadrant, or the volume bar in the chart in the top right quadrant. The hourly data are limited to each hour beginning at 8:00 a.m. Central Time.



## A Closer Look at the Calculation

The Three-Month SOFR assumption in the table is derived by interpolating the SOFR curve to the exact dates between the index futures expirations<sup>4</sup>.

This number only serves as a benchmark against which the implied financing rate is judged. To change the assumption, type over the number; once you do so, the box will show a dark yellow background.

To change the dividend assumption, use the +/- button next to the dividend column header. This allows you to increase or decrease the entire column by, for example, 15%.

Finally, to change the VWAP number, type in the (average) price of a spread trade, for example, to convert it to the implied financing rate

SUMMARY							
S&P 500							
NASDAQ 100							
DOW (\$5)							
S&P MIDCAP 400							
RUSSELL 1000							
RUSSE							
Dec 2022 to Mar 2023 Pace of the Roll						Calculate	Clear
DATE	VWAP	IMP. RATE	VOLUME	3M SOFR	DIVIDEND <input type="checkbox"/>	SPREAD TO 3M SOFR	
11/28	33.50	5.0880	2,477	4.55	17.86	53.55	
11/29	33.03	5.0717	2,229	4.56	17.86	51.17	
11/30	33.09	5.0141	5,993	4.57	17.86	44.41	
12/01	33.58	4.9751	9,795	4.53	17.81	44.76	
12/02	33.44	4.9908	10,847	4.54	17.81	45.33	
12/05	32.94	4.9951	9,201	4.54	17.81	45.26	
12/06	31.66	4.9480	17,281	4.54	17.81	40.80	
12/07	31.18	4.9191	36,442	4.52	17.84	39.66	
12/08	31.36	4.9161	125,963	4.53	17.93	39.11	
12/09	31.93	4.9728	442,728	4.52	17.92	45.03	
12/12	32.36	5.0237	800,244	4.54	17.92	48.62	
12/13	33.24	5.0052	549,693	4.50	17.91	50.77	
12/14	32.89	4.9910	223,127	4.50	17.92	49.10	
12/15	30.57	4.9018	162,458	4.50	17.84	40.43	

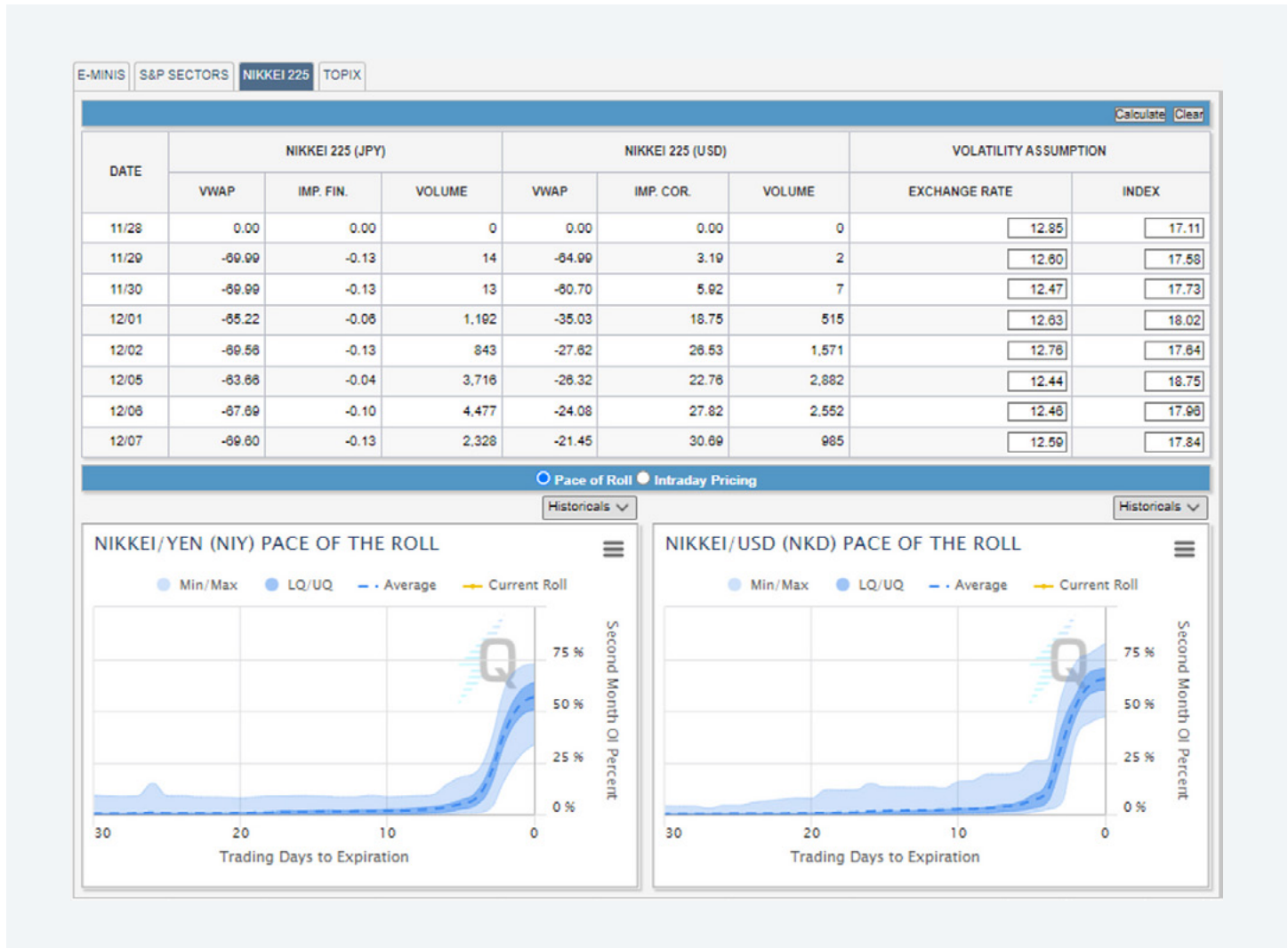
To restore the default numbers in the table, hit the clear button at the top right corner of the pace of the daily calculation table.

<sup>4</sup> To be more exact, the period between the two futures expiration is defined as the third business day from the front month index futures expiration to the third business day from the deferred month index futures expiration.

## Nikkei 225 Futures

There are two versions of the Nikkei 225 Index futures at CME Group, yen- and USD-denominated futures. The former is the natural version, while the latter is the “quanto” version. The implied financing rate is calculated for the yen-denominated version, while the implied correlation is calculated for the USD-denominated version. You might type over the exchange rate and index volatility assumptions.

In the bottom two panels, toggle between the pace of the roll charts and the volume vs. implied financing/correlation charts.



To access the Equity Quarterly Roll Analyzer, visit [CMEGroup.com/rollpace](https://cmegroup.com/rollpace).

For questions related to the tool or any CME Equity Index products, [contactequities@cmegroup.com](mailto:contactequities@cmegroup.com).

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[cmegroup.com](https://cmegroup.com)

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