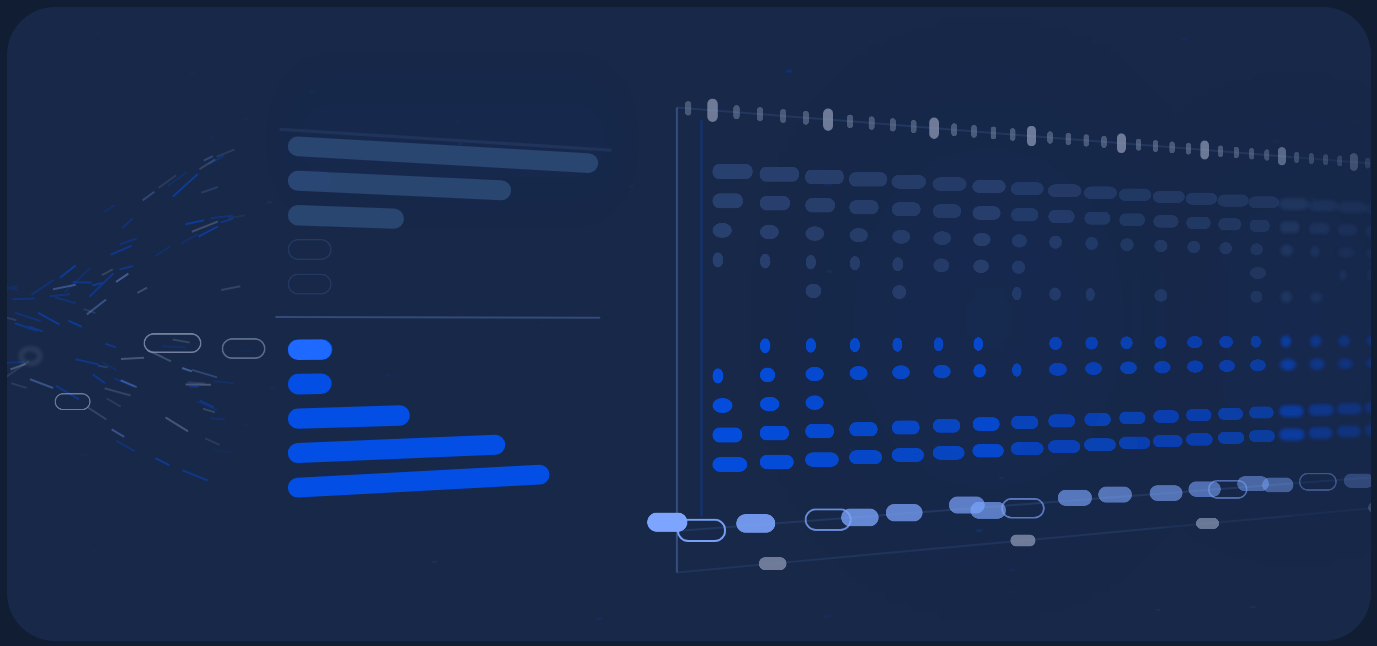
Rillor

EXPLAINER

# TAQ data explained: timestamps, sale conditions and round lots

NYSE's Daily TAQ files hold every trade and quote on the U.S. consolidated tapes, and their timestamp, sale condition and round lot rules changed on set dates.



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# Summary


- TAQ (Trade and Quote) data is NYSE's file record of the U.S. consolidated tapes. Daily TAQ holds every trade and quote the CTA and UTP securities information processors (SIPs) published each day, with Master, NBBO, price band and administrative files. Trades, quotes and the Master file go back to 1 January 1993 [1].
- A Daily TAQ trade carries three times: SIP publication time, the participant timestamp and, for off-exchange trades, the TRF timestamp. The participant timestamp is matching-engine time for exchange trades and member-reported execution time for trades reported to FINRA [1, 7, 8].
- Precision moved from seconds in 1993 to nanoseconds in 2016 (UTP) and 2017 (CTA). Sequence numbers on Tapes A and B skip by design [1, 8].
- Sale conditions decide which trades update the last price, the high and low, and volume. When a trade carries several conditions, any "no" wins [7, 8].
- On 3 November 2025, round lots became 100, 40, 10 or 1 share by price and quote sizes moved to shares. Fractional trade sizes followed on 23 February 2026 and odd-lot quotes on the UTP SIP on 27 April 2026 [1, 7, 13, 23].
- Still ahead: tick and access fee compliance in November 2027, a proposal to rescind Rule 611, and a 23-hour SIP day from 6 December 2026 [11, 15, 16].

# Background

**The consolidated tapes.** Since the late 1970s, exchanges have sent their trades and quotes to the SIPs under SEC mandate [10]. The combined CTA (Consolidated Tape Association) and CQ (Consolidated Quotation System) SIP carries NYSE-listed securities (Tape A) and securities listed on Cboe, NYSE Arca, NYSE American and other regional exchanges (Tape B). The UTP (Unlisted Trading Privileges) SIP carries Nasdaq-listed securities (Tape C) [10]. The Securities Industry Automation Corporation (SIAC), an NYSE affiliate, processes the CTA and CQ plans, and Nasdaq processes the UTP plan [10, 14]. CTA's feeds are CTS (trades) and CQS (quotes), and UTP's are UTDF and UQDF [1].

**Off-exchange trades.** Trades executed away from an exchange reach the tapes through FINRA's trade reporting facilities (TRFs) or its Alternative Display Facility (ADF) [1, 7]. The FINRA/Nasdaq TRF rule requires a report "no later than 10 seconds after execution" [21]. An Office of Financial Research working paper of June 2025 notes that in TAQ the TRF "is a record book of many underlying venues" [30].

**The rules behind the data.** The SEC's Market Data Infrastructure rule, effective 8 June 2021, added a new round lot definition with certain odd-lot information, depth of book data and auction information to "core data" [12]. On 18 September 2024, the SEC adopted a $0.005 minimum pricing increment for certain stocks, lower access fee caps and an earlier timetable for the round lot and odd-lot definitions [13, 15]. A December 2024 stay left those definitions in force [15].

**The products.** Daily TAQ is licensed by month of history or for ongoing access [1]. Monthly TAQ shipped on DVDs about four weeks after each month [6].

**Dated breaks.** The table lists the changes this report found that alter what a Daily TAQ field means or holds.

| Date | Change |
|---|---|
| January 1993 | Trades, quotes and Master history begin, times in seconds |
| October 2003 | Milliseconds on both tapes. NBBO file from 10 September 2003 |
| 9 December 2013 | Odd-lot trades reported to the tapes. Sale conditions I and 9 redefined |
| 27 July 2015 (UTP), 3 August 2015 (CTA) | Microseconds. Participant and TRF timestamps added |
| 24 October 2016 | UTP nanoseconds. CTA microseconds padded with 000 |
| 18 September 2017 | CTA nanoseconds |

| Date | Change |
|---|---|
| First quarter 2023 | NBBO file adds indicator values G and O (CTA), 1 and 4 (UTP) |
| 28 May 2024 | Sale condition N (next day) retired |
| 3 November 2025 | Round lots of 100, 40, 10 or 1 share. Quote sizes in shares |
| 23 February 2026 | Fractional share quantities for NMS stocks |
| 27 April 2026 | UTP SIP odd-lot quotes and best odd-lot bid and offer (BOLO) |
| 1 June 2026 | Daily TAQ Odd Lot Quotes and BOLO files, per the specification |
| 6 December 2026 (scheduled) | SIPs run about 23 hours a day, five days a week |
| November 2027 | Half-penny tick and $0.001 access fee cap compliance |
| May 2028 | Odd-lot quotes at each price level |

Sources: [1, 7, 8, 11, 13, 14, 15, 22, 23, 26].

# Method

**What was examined.** The field definitions and dated changes that decide how Daily TAQ records read, and the rule changes from 2013 to 2026 behind them.

**Sources.** NYSE's Daily TAQ specification v4.3 of 3 March 2026, the newest on its technical documents page, is the main source, with v4.0 for earlier wording [1, 2, 5]. NYSE's product pages and the 2012 Monthly TAQ guide cover the products [3, 4, 6]. The UTP specification of September 2026, the CTS and CQS specifications of January 2026 and two CTA Plan pages give the SIP rules [7, 8, 9, 10, 11]. SEC releases, orders, the Rule 611 proposal and its fact sheet, rulemaking page and newsroom list give the regulation [12, 13, 14, 15, 16, 17, 18, 19, 20]. FINRA documents cover off-exchange reporting [21, 22, 23]. Three journal articles and four working papers supply measurements [24, 25, 26, 27, 28, 29, 30]. WRDS gives its product dates [31]. Cboe's April 2026 post is an exchange operator's own analysis of SIP data [32]. Rillor's market data page is cited only for what Rillor offers [33].

**How.** Field definitions are quoted and long tables summarized. Dates come from the regulator or the specification. Where the Daily TAQ and SIP specifications define a field differently, both are given. The Rule 611 status was checked on 24 October 2026 [18, 20]. The report uses no Rillor data.

# Findings

## 1. What the Daily TAQ files contain

Daily TAQ "is a set of files that contain all trades and quotes for all issues listed and traded on US regulated exchanges for a single trading day", derived from the output of the CTA and UTP SIPs, which publish between 4:00 a.m. and 8:00 p.m. [1]. NYSE's product page offers them for the previous trading day [3].

| File | Typical records per day | History from |
|---|---|---|
| **Master** | 11,700 | 1 Jan 1993 |
| **Trades** | 69 million | 1 Jan 1993 |
| **Quotes (26 files, by symbol)** | 1.9 billion | 1 Jan 1993 |
| **Odd Lot Quotes** | Unstated | 1 Jun 2026 |
| **NBBO** | 330 million | 10 Sep 2003 |
| **BOLO** | Unstated | 1 Jun 2026 |
| **Trade LULD, Quote LULD** | 8 million each | 8 Apr 2013 |
| **CTA Admin, UTP Admin** | 4.7 and 3.7 million | 28 Feb 2011 |

Source: [1]. Record counts are NYSE's estimates "based on recent trading volumes", unchanged since at least version 4.0 of November 2022 [1, 2].

Files are pipe-delimited ASCII compressed with gzip, each with a trailer giving its record count [1].

The NBBO file is "a record of all quotes that cause the NBBO to change", crediting the largest quoted size when several exchanges share the best price [1]. The file "does not allow you to determine the total number of round lots across all exchanges at the best price", which needs a sum over the Quotes file [1].

Depth of book for NYSE's own markets sits in its single-exchange products, Integrated and OpenBook [4]. Older dates follow older layouts, and NYSE keeps period-specific specifications, such as one for 10 September 2003 to 1 October 2006, beside versions 1.6 to 4.3 [5].

## 2. Daily TAQ, Monthly TAQ and their coverage dates

Monthly TAQ recorded trade time as the "cumulative number of seconds since midnight" [6]. Before June 1995 for NYSE and NYSE MKT trades, and March 1996 for their quotes, the time shown was when IGS received the message, "approximately 3 seconds later" than the CTS or CQS time stamp [6].

Holden and Jacobsen, writing in 2014, describe Monthly TAQ as widely used in academic research, with Daily TAQ priced three to four times higher [24]. They compared the two for 100 randomly selected firms from 1 April to 30 June 2008, with 34 million trades and 351 million quotes [24].

| Measure | Monthly TAQ compared with Daily TAQ |
|---|---|
| Percent effective spread | 54% larger |
| Percent quoted spread | 47% smaller |
| Negative percent quoted spread | 37 times more often |
| Trades outside the NBBO | Eight times more often |
| Percent realized spread | 12% larger |
| Percent price impact | 109% larger |

Source: [24].

The causes were withdrawn quotes, second versus millisecond timestamps and other causes, including canceled quotes [24]. Daily TAQ is their first-best solution. The second-best adds three steps to Monthly TAQ: Interpolated Time, which "uses the ordering of trades and quotes within a second to make an educated guess about the millisecond", an adjustment for withdrawn quotes, and deletion of crossed or locked states [24]. These steps removed the quoted spread difference and 91% of the effective spread difference, and the authors report that they change research inferences [24].

WRDS lists its Daily product from 10 September 2003 and its Monthly product from 1 January 1993 to 31 December 2014 [31]. NYSE's Daily TAQ trades and quotes start on 1 January 1993 [1]. WRDS describes TAQ as recorded "to the microsecond" [31], while NYSE's specification gives nanoseconds since 2016 and 2017 [1].

## 3. Three timestamps on one record

The Trades file holds "Every trade reported to the consolidated tape by all CTA and UTP participants", sorted by symbol, time and sequence number [1]. Three fields are times.

- **Time (field 1)** is "Time the trade was published by the SIP" [1]. In the UTP feed, the sipTime is "the time the outbound message is produced by the SIP" [7].
- **Participant Timestamp (field 13)** is "Time when the trade was reported to the SIP" in Daily TAQ [1]. The SIP specifications define it by source. From an exchange, it "denotes the Exchange Matching Engine Publication timestamp for a transaction", from clocks "accurate within tolerances of 100 microseconds or less" [1, 7, 8]. From the ADF or a TRF, it "denotes the time of execution that a FINRA member reports", converted by FINRA to nanoseconds [7].
- **TRF Timestamp (field 14)** is blank for exchange trades [1]. For a TRF or ADF trade, it is the time the facility published the trade on its own proprietary feed, where it has one, and otherwise blank [1, 7].

Daily TAQ writes times as HHMMSS plus nine digits of nanoseconds since midnight [1]. The SIP feeds count nanoseconds since the Unix epoch [7, 8]. The specification's 2015 entry counts the participant timestamp from "midnight Eastern Time (ET)" [1], so a join to feed captures needs the trade date and the Eastern offset.

**Reporting latency.** Bartlett and McCrary define reporting latency as SIP time minus participant time: transit to the SIP plus its processing [27]. Their sample is the Dow 30 from 6 August 2015, the first full day of exchange compliance with microsecond timestamps, to 30 June 2016 [27].

| Measure (Dow 30, August 2015 to June 2016) | Value |
|---|---|
| Mean latency, quote updates | 1.13 milliseconds |
| Mean latency, trade reports | 22.84 milliseconds |
| Off-exchange trades, Tape A, mean (median) | About 87 (7.1) milliseconds |
| Off-exchange trades, Tape C, mean (median) | About 101 (7.0) milliseconds |
| Quotes and trades with SIP time before participant time | About 0.88% and 0.72% |

Source: [27].

The authors call the negative latencies "physical impossibilities", mostly from clock synchronization issues at NYSE Arca and the NYSE SIP [27].

**Which clock orders events.** Daily TAQ sorts by SIP time [1]. Bartlett and McCrary "use the Participant Timestamp to place trades in chronological order" and show Apple trades on 13 November 2015 that the two clocks order differently [27]. Battalio, Jennings, Saglam and Wu chose it as their benchmark because "it is the earliest TAQ timestamp" [29]. In their December 2020 sample, it was in milliseconds for their data providers' trades [29].

**Precision of TRF times.** FINRA Rule 6380A asks for milliseconds "if the member's system captures time in milliseconds" [21]. A nanosecond field can therefore hold a time reported to the millisecond or the second [7, 21]. The OFR paper finds that "timestamp precision is inconsistent between venues" [30].

## 4. Timestamp precision by date and tape

SIP timestamp accuracy "has improved in steps over time, with CTA and UTP on different schedules from each other" [1].

| Date of change | UTP (Tape C) | CTA (Tapes A and B) |
|---|---|---|
| **January 1993** | Seconds | Seconds |
| **October 2003** | Milliseconds | Milliseconds |
| **27 July 2015** | Microseconds | Unchanged |
| **3 August 2015** | Unchanged | Microseconds |
| **24 October 2016** | Nanoseconds | Microseconds followed by 000 |
| **18 September 2017** | Unchanged | Nanoseconds |

Source: [1].

- Before October 2003, events in the same second share a time, and their order comes from the file sequence. Interpolated Time addresses the same problem in Monthly TAQ [1, 24].
- From 24 October 2016 to 17 September 2017, CTA times are the SIP's microseconds "appended with three trailing zeroes" [1].
- From 27 July to 2 August 2015, and again from 24 October 2016 to 17 September 2017, the two SIPs ran at different precisions, so cross-tape latency or ordering comparisons in those windows compare unlike clocks [1].
- The participant and TRF fields were added by version 2.1 of June 2015, effective 27 July 2015 for UTP and 3 August 2015 for CTA [1]. Earlier files carry SIP time only.

## 5. Sequence numbers and ordering

For Tape C, sequence numbers are the UTP feed's own, "incrementing by 1 with every message" [1]. For Tapes A and B, they combine the CTA Block Sequence Number and Message ID, so they "do not increase continuously" [1]. The formula is "(CTA Block Sequence Number * 100) + CTA Message ID", with examples of 103, 2,439 and 456,705 [1].

On the CTS feed, a block's number is the sequence number of its first message, and the next block's number rises by the count of messages in the block before [8]. Message IDs start at one in each block [8]. A block numbered 1 with three messages therefore gives Daily TAQ numbers 101 to 103, and the next block, numbered 4, starts at 401 [1, 8]. Block numbers start at zero each day and can be reset higher after a line failure recovery [8]. A gap check on Tapes A and B must decode the formula first. The note on rebuilding order books from snapshots and diffs (https://rillor.com/insights/rebuilding-order-books-from-snapshots-and-diffs) covers the same trap on other feeds.

**Trade IDs.** Version 2.2a of the specification (July 2016) added a Trade ID that tracks trades "across corrections and cancels" [1]. It is "unique per participant per symbol per session", and on Tapes A and B it "can be negative or 0" [1]. On UTP, an as-of trade's ID carries "no guarantee of uniqueness" [7].

## 6. Sale conditions and which trades count

Field 4 shows "Up to four codes" per trade, from separate CTA and UTP lists [1]. Subscribers "may use this field to determine when to update the high, low, and last sale prices and volume" [7].

| Condition (CTA code, UTP code) | Consolidated last, high and low | Market center last, high and low | Volume |
|---|---|---|---|
| **Regular sale (blank, @)** | Yes | Yes | Yes |
| **Intermarket sweep (F, F)** | Yes | Yes | Yes |
| **Average price trade (B, W)** | No | No | Yes |
| **Odd lot trade (I, I)** | No | No | Yes |
| **Extended hours or Form T (T, T)** | No | No | Yes |
| **Extended hours, out of sequence (U, U)** | No | No | Yes |
| **Qualified contingent trade (7, 7)** | No | No | Yes |

| Condition (CTA code, UTP code) | Consolidated last, high and low | Market center last, high and low | Volume |
|---|---|---|---|
| **Market center official close (M, M)** | No | Yes | No |
| **Corrected consolidated close (9, 9)** | Yes | No | No |

Sources: CTS and UTP sale condition matrices [7, 8]. Notes in each matrix make some updates conditional.

On UTP, a sold last (L) trade updates the consolidated last only before the End of Last Sale Eligibility message at 16:00:10 [7]. Form T covers trades executed from midnight to 9:30 a.m. and from 4:00:01 p.m. to 8:00 p.m. [7].

**Several conditions on one trade.** "If any one or all of the Sale Conditions indicate 'NO', the trade does not qualify" [8]. UTP applies the same rule to each statistic [7].

**A documented filter.** In its June 2026 Rule 611 proposal, the SEC built its sample from filtered stock-days in the TAQ Masterfile for the fourth quarter of 2025, with SIP "regular-way trades (i.e., trades with a sale condition of "Regular Trade," "Intermarket Sweep Order", or "Odd Lot Trade")" [17]. That filter keeps odd lots, which the SIP matrices leave out of the last sale, so a study should state which rule it follows.

**Odd-lot trades before December 2013.** In 2014, O'Hara, Yao and Ye reported that odd lots "are not reported to the consolidated tape or in databases such as TAQ". In their sample the median odd-lot share of trades was 24%, with 60% or more in some stocks, and odd lots contributed 35% of price discovery [25]. Omitting them "leads to inaccuracies in order imbalance measures" [25]. The SEC approved plan amendments in October 2013 to put odd-lot trades on the tape [12], and reporting began on 9 December 2013 [26]. Roseman, Van Ness and Van Ness found "a small increase in odd-lot trading" after the change [26].

## 7. Corrections, cancels, withdrawn quotes and the NBBO file

**Trade corrections.** Field 8 marks each trade's history [1].

| Code | Meaning |
|---|---|
| 00 | Regular trade, not corrected, canceled or in error |
| 01, 07, 08 | Original trade later corrected, marked erroneous or canceled |
| 12, 11, 10 | Correction, error or cancel record, following 01, 07 or 08 |

Source: [1].

"The final correction will be published" [1]. On UTP, cancel and correction messages carry the original trade ID and updated consolidated high, low, last and volume [7]. Monthly TAQ showed "only the original trade and final correction" [6].

**Withdrawn quotes.** Quotes file field 13 marks "a cancel or a correction of a previous quote" [1]. The Monthly TAQ guide notes that NASD quotes "with mode 12 and zeroes" are "quotes withdrawn by the market maker" [6]. Holden and Jacobsen set a withdrawn quote to missing rather than carrying the prior quote forward [24]. The Daily TAQ Quote file makes no adjustment, while its NBBO file does [24].

**The NBBO file before and after 2023.** In 2008 data, "when a single exchange has both the best bid and the best offer, then the official SIP NBBO quote is recorded in the DTAQ Quotes file, not in the DTAQ NBBO file" [24]. Holden and Jacobsen interleaved those records with the NBBO file by symbol, date, time and sequence number [24]. A May 2019 version of the specification excluded codes G and 4 from the NBBO file, and version 4.0 added G and O for CTA and 1 and 4 for UTP, "Changes effective Q1 2023" [1]. CTA's G marks a quote that "is itself the Best Bid and Best Offer", and UTP's 4 one that "is itself the new NBBO" [1]. Earlier files need the merge. The specification does not say whether the change closes every gap.

**Locked and crossed states.** The NBBO is locked when the national best bid equals the national best offer and crossed when the bid is higher [19, 24].

## 8. Round lots, odd lots and fractional shares, 2025 to 2026

**The round lot definition.** The 2020 rule set round lots of "100 shares for stocks priced at $250 or less, 40 shares for stocks priced at $250.01 to $1,000, 10 shares for stocks priced at $1,000.01 to $10,000, and 1 share for stocks priced at $10,000.01 or more" [12]. The 2024 amendments moved reassignment "from a monthly basis to a semiannual basis" [13]. Average closing prices in March set the round lot from the first business day of May, and prices in September set it from the first business day of November [13]. The compliance date, for the definition and for SIP quote sizes "in terms of the number of shares, rounded down to the nearest multiple of a round lot", was the first business day of November 2025 [13]. The UTP specification gives 3 November 2025 [7].

**What changed in the files.** The Master file's Round Lot values are "100,40,10,1", where version 4.0 listed "100,50,10,1" [1, 2]. In version 4.0, quote sizes were "in round lots" [2]. Version 4.1b of August 2025 removed that phrase, and NBBO sizes are now "in shares" [1]. An odd lot is "any number of shares less than the symbol round lot size" [8]. For a stock assigned a 40-share round lot, a 40-share bid was an odd lot before 3 November 2025 and a round lot after it. Reassignment each May and November makes the round lot a per-day attribute.

**The break in quote series.** Cboe's April 2026 post analyzed SIP data by price group [32].

| Price group | Average size at the inside | Average NBBO spread |
|---|---|---|
| **$0 to $250 (round lot unchanged)** | About 1,840 shares in November 2025, about 2,097 by March 2026 | About 80 bps before, 85 after |
| **$250 to $1,000** | 209 to 148 shares, October to November 2025 | About 35 to 26 bps, 21 days before and after |
| **$1,000 to $10,000** | About 99 to 32 shares, October to November 2025 | About 53 bps (July to October 2025) to 35 (November 2025 to March 2026) |
| **Above $10,000** | About one share | 9 bps before, 10 after |

Source: Cboe's own analysis [32].

A spread or depth series across 3 November 2025 mixes two definitions of the best quote.

**Fractional shares.** FINRA set "Monday, February 23, 2026" for "fractional reporting and dissemination of NMS stocks" [23]. The UTP feed carries volume with "implied 6 decimal places" [7], and Daily TAQ version 4.2 changed the Trade Volume field for the change [1]. Writing in February 2023, Bartlett, McCrary and O'Hara noted that "the consolidated tape does not accept trade reports for less than a single share", so fractional trades "round up" to one share, and that reporting protocols "inflate trading volume data" [28].

**Odd-lot quotes.** The odd-lot quote parts of odd-lot information were due in May 2026: odd lots at or inside the NBBO "aggregated at each price level", and the best odd-lot bid and offer (BOLO). Odd-lot transactions, the third part, have been on the tape since 2013 [13, 14, 26]. On 15 January 2026, the SEC deferred the price-level part to May 2028 [14].

A FINRA filing records the SIPs' plan to start the BOLO and each venue's top-of-book odd-lot quote on 27 April 2026, "so that the implementation date occurs on a Monday" [22]. The CQS specification publishes odd-lot quotes "at or better than the NBBO", allows "only one price level for each Participant", and excludes symbols with a round lot of 1 [9]. The UTP specification of September 2026 states that its odd-lot messages "were introduced and supported" on 27 April 2026, in a "Hot Cut" [7].

Daily TAQ's Odd Lot Quotes file holds "bids and offers for quantities less than round lot size" in 30 files a day, 24 from CQS and 6 from UTP, and its BOLO file holds the best odd-lot bid and offer across participants [1]. Both start on 1 June 2026, according to the March 2026 specification [1]. The OFR paper of June 2025 describes odd-lot quotes as missing from TAQ [30].

## 9. Tick sizes, access fees, Rule 611 and the 23-hour day

**Tick sizes and access fees.** The 2024 release adopts "$0.005, for quotes and orders priced $1.00 or more for NMS stocks that have a TWAQS of $0.015 or less", and no increment for trades [13]. It cut the access fee cap to $0.001 per share for quotes at $1.00 or more [15]. On 11 June 2026, the SEC extended relief for both to the first business day of November 2027 [15]. The UTP specification keeps every symbol on a penny increment until November 2027 [7]. Quote prices for stocks assigned the half-penny step change grid on that date [7, 13].

**Rule 611 and Rule 610(e).** Rule 611, adopted in 2005, protects displayed quotes against trade-throughs, where "one trading center executes an order at a price that is inferior to the price of a protected quotation displayed by another trading center" [19]. On 11 June 2026, the SEC "proposed amendments to rescind Rules 611 and 610(e)" [16]. The proposal would remove "trade-through exempt indicators" from the definition of regulatory data [17]. Daily TAQ carries that indicator in Trades field 15, "Used with certain Sale Conditions", and UTP condition 8 is a "Placeholder for 611 Exempt" [1]. Comments closed on 17 August 2026 [18]. On 24 October 2026, the rulemaking page listed it as "Proposed" [18], and the newsroom list showed no later action [20].

**The 23-hour day.** From 6 December 2026, the UTP SIP is scheduled to run from Sunday 21:00 to Friday 20:00 Eastern, with about an hour of maintenance each evening [7]. CTA's FAQ of 29 September 2026 moves its start from 1:30 a.m. to 9:00 p.m. the evening before, with the date "dependent on Listing Exchange readiness and regulatory approvals" [11]. The 9:00 p.m. to 8:00 p.m. window is one trading day, and trades and quotes "reported between 9:00 PM and 12:00 AM are counted under the next calendar date for all statistical calculations" [11]. The Daily TAQ specification still describes a 4:00 a.m. to 8:00 p.m. window [1].

# Implications

**For researchers.** A series can shift at each dated break for reasons outside the market. A study can flag each break, name the product and specification version behind its sample, and state coverage by product, since NYSE and WRDS give different start dates [1, 5, 31]. Read each stock's round lot per day from the Master file [1, 13]. State the trade filter, whether the SIP matrices or a definition such as the SEC's regular-way set [7, 8, 17]. For NBBO files before 2023, Holden and Jacobsen's merge of single-exchange NBBO records applies [1, 24]. One-share prints before 23 February 2026 may be rounded-up fractional trades [28]. None of this is investment advice.

**For data engineers.** Keep all three timestamps as published, with unit and reference point, and convert between since-midnight and epoch times with the trade date and Eastern offset [1, 7]. Decode the CTA formula before checking gaps on Tapes A and B [1, 8]. Store volume as a decimal from 23 February 2026 [1, 7]. Treat quote sizes as round lots before 3 November 2025 and shares after [1, 2]. Plan for the odd-lot files from 1 June 2026 and the next-calendar-date rule under the 23-hour schedule [1, 11].

**For buyers of trade and quote data.** Ask which timestamps each record keeps, whether sale conditions are kept as reported and how the 2025 and 2026 breaks are flagged. Rillor's market data holds trade and quote history for U.S. stocks and futures from 2018, mapped to one symbol list. Each trade keeps its sale conditions as reported, and every record keeps the source's own timestamp beside capture time [33].

# Limits of this analysis

- No TAQ files were analyzed. Statements about them come from the sources.
- Some dates come from documents written before the event. The CQS specification scheduled odd-lot quotes for 27 April 2026, and only the UTP specification confirms the launch. The 1 June 2026 start of Daily TAQ's odd-lot files comes from a March 2026 specification that lists their sizes as TBD.
- No source explains why Daily TAQ's odd-lot files start five weeks after the SIPs' launch, or how Daily TAQ will split a 23-hour session into files.
- Latency figures cover the Dow 30 in 2015 and 2016, and Holden and Jacobsen used 2008 data.
- The Cboe figures are Cboe's own analysis and were not checked here.
- Regulatory status is as of 24 October 2026. The outcome of the Rule 611 proposal and any change to the 2027 and 2028 dates are unknown.

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