Data guide: Chart.csv and GEX.csv

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Chart.csv is the SPX Chart download (2016-present, 29 columns). GEX.csv is the older master spreadsheet (2004-present, 23 columns). They are both updated by trading session, but they use different price bases and column conventions.

Volatility points such as VIX = 20 mean 20% annualized volatility. DIX = 45 means 45%. Blank values are missing observations, not zeros. The CSV headers are the column names; the Chart sometimes uses shorter labels.

Chart.csv

One row per trading session from 2016-01-04. The download contains the dated Chart indicators and calculation inputs, but no browser normalization or forward paths.

Date and total-return price

`DATE`

Unit: YYYY-MM-DD. Observation session. All other values on the row describe information dated to that session; this file contains no forward outcomes.

`OPEN`

Unit: SPXTR index points. Synthetic total-return open: same-day SPX open multiplied by SPXTR close / SPX close.

`HIGH`

Unit: SPXTR index points. Synthetic total-return high from the same scaling; expanded if needed to contain the synthetic open and observed close.

`LOW`

Unit: SPXTR index points. Synthetic total-return low from the same scaling; expanded if needed to contain the synthetic open and observed close.

`CLOSE`

Unit: SPXTR index points. Observed S&P 500 Total Return Index close. The Chart's price trend and return calculations use this series.

Positioning and market Flow

`GEX_PLUS`

Unit: thousands of dollars per SPX point. Raw GEX+ dealer exposure, combining the GEX and VEX sensitivities. This is the same dated source value as GEX+ in GEX.csv; the browser displays it in dollar billions after dividing by one million.

`DIX`

Unit: percent, 0-100 scale. Raw daily Dark Index reading. A value such as 45 means 45%, not 0.45. It is not a moving average.

`MARKET_FUDGINESS_TOTAL_VOLUME_PCT`

Unit: percent. Whole-market Fudginess: 100 x gross option delta dollars from total contract volume / stock share-dollar volume, summed across the covered ticker universe including ETFs. The current session uses same-day OHLC share volume; it is reconciled to Eod later.

Volatility and futures observations

`VIX`

Unit: annualized volatility points. Cboe 30-day S&P 500 implied volatility index; the index-implied leg of the dispersion triangle.

VIXEQ

Unit: annualized volatility points. Cboe S&P 500 constituent-equity implied volatility index; the constituent-implied leg of the triangle.

VX30

Unit: annualized volatility points. 30-day constant-maturity VIX futures level from the dated settlement curve. It is a futures term-structure observation, not VIX spot.

VVIX

Unit: annualized volatility points. Cboe VIX-of-VIX index level, describing implied volatility of VIX options.

Price and volatility trends

PRICE_TREND

Unit: dimensionless ratio. P: 21-session mean SPXTR daily percent return divided by the 21-session mean absolute daily percent return. Positive values indicate upward trend.

VOL_TREND

Unit: percentage points of daily absolute move. V: current 21-session mean absolute SPXTR daily return minus its delayed 21-session average. Positive values indicate a rising realized-move regime.

VOLATILITY_TREND_RESIDUAL

Unit: basis points of expected daily move. Chart VIBE: 100 x [VOL_TREND - 0.75 x the matching VIX-implied daily-move trend]. Unclipped. This is a newer Chart construction and is not numerically identical to the legacy GEX.csv VIBE.

VX30_MINUS_VIX

Unit: volatility points. VX30 minus same-date VIX; a compact measure of the VIX futures premium or discount.

Implied and realized dispersion triangle

IMPLIED_DISPERSION

Unit: annualized volatility points. Square root of max(VIXEQ squared - VIX squared, 0). Implied dispersion is floored at zero if the squared-leg difference is negative.

REALIZED_DISPERSION

Unit: annualized volatility points. Root-mean-square of Moon's daily realized-dispersion observations over the trailing 30-calendar-day path. This is a rolling path statistic, not the single-day observation.

IMPLIED_CORRELATION

Unit: ratio. VIX squared / VIXEQ squared. A variance-ratio proxy in the implied triangle; it is not a pairwise stock-correlation estimate.

REALIZED_CORRELATION

Unit: ratio. Realized index volatility squared / realized constituent volatility squared, computed on the same trailing path.

REALIZED_INDEX_VOLATILITY

Unit: annualized volatility points. Root-mean-square of SPXTR daily returns over the trailing 30-calendar-day path, annualized with 252 sessions.

REALIZED_CONSTITUENT_VOLATILITY

Unit: annualized volatility points. Square root of realized index volatility squared plus realized dispersion squared; the constituent RMS leg of the realized triangle.

Relative value and calculation inputs

CURRENT_CONSTITUENT_IV_TO_RV_LOG_VARIANCE_RATIO

Unit: natural log ratio. 2 x ln(current VIXEQ / current realized constituent volatility). Positive means current implied variance exceeds realized variance.

WINDOW_START_CONSTITUENT_IV_TO_CURRENT_RV_LOG_VARIANCE_RATIO

Unit: natural log ratio. 2 x ln(VIXEQ at the start of the realized window / current realized constituent volatility). Compares an earlier implied observation with the subsequently realized path.

CURRENT_INDEX_IV_TO_RV_LOG_VARIANCE_RATIO

Unit: natural log ratio. 2 x ln(current VIX / current realized index volatility).

WINDOW_START_IMPLIED_MINUS_CURRENT_REALIZED_CORRELATION

Unit: ratio difference. Implied correlation observed at the realized window's start minus correlation realized over that window.

VX30_ON_INDEX_BETA_252_SESSION

Unit: dimensionless slope. Rolling regression slope of VX30 daily log changes on SPXTR daily log returns, using up to 252 recent sessions and requiring at least 80% valid pairs.

MEAN_ABSOLUTE_DAILY_RETURN_21_SESSION

Unit: percent per session. ADM21: mean absolute SPXTR close-to-close daily percent return across the trailing 21 sessions. Used to construct P, V, and normalized-by-realized-vol return views.

REALIZED_DISPERSION_1D

Unit: annualized volatility points. Moon's native one-day realized-dispersion reconstruction from prior SPY weights and constituent daily returns. This is the daily input to REALIZED_DISPERSION, not the official SPRSP1D value.

How the Chart measures fit together

Implied and realized triangles

On the implied side, VIXEQ squared = VIX squared + implied dispersion squared, subject to the zero floor. On the realized side, constituent volatility squared = index volatility squared + realized dispersion squared. The realized legs use the same trailing 30-calendar-day path and 252-session annualization.

The 30-calendar-day window starts at the last available trading session on or before the threshold date. The daily path runs from the next session through the observation date. 'Window start' fields compare the implied reading at that start with the volatility or correlation realized over the following path.

VIXEQ, VX30, and VVIX can arrive at different times. Their missing same-session inputs, and any dependent calculations, remain blank until a valid observation is available. Whole-market Flow also leaves historically incomplete sessions blank rather than estimating them.

Chart.csv deliberately does not include _NORM columns, forecast paths, forward outcomes, or browser display conversions. A downloaded raw GEX_PLUS value and its browser dollar-billion label therefore have different numerical scales.

GEX.csv

The legacy master spreadsheet has 23 columns and begins on 2004-01-02. Its established abbreviated headers are retained here to match the downloadable file.

Avoid look-ahead

CHG(%) is the next trading session's SPX return placed on the current row. Use it as an outcome, never as information known on DATE. The final row is blank in this column.

Session, outcome, and prices

DATE

Unit: YYYY-MM-DD. Observation session.

SPX

Unit: SPX index points. S&P 500 price index close. Unlike Chart.csv CLOSE, this does not include reinvested dividends.

CHG(%)

Unit: percent. The next session's SPX close-to-close return, assigned to the current observation row. It is a forward outcome; the latest row is blank until the next session exists.

OPEN / HIGH / LOW / CLOSE

Unit: SPX index points. The day's unadjusted S&P 500 price-index candle. CLOSE corresponds to SPX, subject to source precision.

Dealer exposure and options context

GEX

Unit: thousands of dollars per SPX point. Dealer gamma exposure from SPX option open interest and estimated dealer direction. Positive values imply stabilizing delta rehedging as SPX moves, under the model's sign convention.

VEX

Unit: thousands of dollars per SPX point. Dealer vanna exposure, expressed on the same SPX-point scale under an assumed inverse volatility response to spot moves.

GEX+

Unit: thousands of dollars per SPX point. Combined GEX and VEX before integer conversion; it can differ by one displayed unit from adding the separately rounded columns. Same raw source value as Chart.csv GEX_PLUS on overlapping dates.

GIV

Unit: annualized volatility points. Gamma-implied volatility: historical one-day volatility associated with the current GEX+ level.

GIV(MAD%)

Unit: percent per day. GIV converted to the expected absolute one-day SPX move (mean absolute deviation convention).

NPD

Unit: net put delta units. Net customer delta of the day's SPX put trading. Negative values denote net customer put buying under the dataset convention.

VGR

Unit: dimensionless ratio, capped at +/-20. Vanna-gamma ratio from customer option exposures. Current producer computes (customer vanna - customer gamma) / customer vanna, with limits at -20 and +20.

Risk, levels, and market context

VIX

Unit: annualized volatility points. Cboe VIX close.

VIX(MAD%)

Unit: percent per day. VIX converted to an expected absolute one-day SPX move.

CR(x)

Unit: multiple. Crash-risk multiple: gamma-implied volatility at a spot level 10% below SPX divided by market-implied volatility at that level. Higher values indicate a larger modeled liquidity/volatility gap.

SU

Unit: SPX index points. SuMo support band: session SPX close minus 0.5 times the next-day standard-deviation point move from same-session ATM 30-day SPX option IV.

MID

Unit: SPX index points. SuMo midpoint band: SPX close plus 0.25 times that point move.

MO

Unit: SPX index points. SuMo momentum band: SPX close plus 1.0 times that point move.

DIX

Unit: percent, 0-100 scale. Daily Dark Index observation. Present from 2010-01-04 in the current historical file.

RISC

Unit: basis points, capped at +/-50. Legacy realized-implied spread: 21-session mean absolute SPX daily return minus the ATM 30-day option-IV expected absolute daily move, multiplied by 100.

VIBE

Unit: basis points, capped at +/-50. Legacy volatility-trend residual based on 21-session realized and ATM option-implied daily-move trends. Its rounding and clipping differ from Chart.csv VOLATILITY_TREND_RESIDUAL.

Conventions and overlap

GEX and VEX use estimated dealer directional open interest. Their modeled signs and sizes depend on that estimation. GEX+ combines them before integer conversion. VGR uses a distinct customer-exposure calculation and should not be interpreted as GEX+ divided by another column.

The SuMo bands are calculated from the same-session SPX close and ATM 30-day SPX option IV. The standard-deviation point move is SPX x ATM_IV30 x sqrt(1/365). The bands describe levels around that close, not observed trading highs or lows.

On overlapping dates, Chart.csv GEX_PLUS matches GEX.csv GEX+, and DIX and VIX share their source observations. Chart.csv uses SPXTR for its price candle, while GEX.csv uses SPX. Chart.csv's VIBE-style residual and GEX.csv's legacy VIBE have different construction and clipping.

Older history has natural gaps: DIX begins in 2010 and RISC/VIBE begin in 2005 in the current file. Blank cells for those periods are expected. No missing value should be read as zero.

Access

Both files and this guide appear in the Yacht Club downloads list. Chart.csv is also served by the authenticated /monitor/api/yachtclub/chart endpoint. The CSVs may be revised as source histories are validated; use DATE and header names when joining or automating.