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The V in 23 Sessions

How the S&P 500 tore back from an Iran-war low to a new all-time high, and what the microstructure was doing while it happened

A reported analysis of the March 17 – April 17, 2026 SPX rally (23 trading sessions)

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> A shorter, journalist-tone version of this analysis is available at: Read the summary brief →

The short version

On the afternoon of **Monday, March 30, 2026**, the S&P 500 touched an intraday low of **$6,316.91**. Eleven trading days later, on Wednesday, April 15, it posted its first close above the prior all-time intraday high of $7,002.28 from January 28. By Friday, April 17, it had climbed to a session high of **$7,147.52**, a total trough-to-peak move of **$830.61, or 13.15%, across 13 trading sessions**. Darrell Cronk, the Chief Investment Officer of Wells Fargo Wealth & Investment Management, characterized the run in a CNBC interview on April 16 as "one of the fastest recoveries ever on record."

This paper reconstructs what happened inside the 23 trading sessions from March 17 to April 17, not just the prices on the tape, but the dealer positioning, the option flow, the volatility surface, and the timing of the macro catalysts that set each leg of the move in motion.

The headline: the rally had a clear external cause (a two-week U.S.-Iran-Israel ceasefire brokered by Pakistan, bolted to a softer-than-expected PPI print and a 10-day Israel-Hezbollah truce announcement), but the speed and shape of the move are hard to understand without looking at what dealers were doing with their gamma books. Public price charts show that the S&P climbed 13% in three weeks. They do not show that the options market was structurally set up to let it happen, a setup that is now inverted in a way that reintroduces asymmetric downside risk.

Part 1, How a war starts a drawdown

The story does not start on March 17. It starts three weeks earlier, at **20:38 UTC on Friday, February 28, 2026**, when President Trump gave the execute order for **Operation Epic Fury**, nearly 900 U.S. and Israeli strikes on Iranian military, naval, missile, and leadership targets in a 12-hour window. One of those strikes killed Iranian Supreme Leader Ali Khamenei. Other strikes hit the country's ballistic missile and drone infrastructure. The operation also produced the war's most consequential civilian-casualty event: the Shajareh Tayyebeh girls' school in Minab, adjacent to a naval base near Bandar Abbas, was struck during school hours between 10:23 and 10:45 AM local time. More than 150 people died, including approximately 120 children between the ages of seven and twelve; Amnesty International's subsequent investigation concluded the school was hit by a U.S.-manufactured Tomahawk missile in what multiple survivors described as a “double-tap” strike, the school's principal moved students to a prayer room after the first impact, which was then struck again.

The S&P 500 had closed at **$7,002.28** intraday high on January 28, 2026. By February 27, the Friday before the war, the VIX sat at 19.86. A normal market.

By March 2, Brent crude was up 10 to 13 percent, to the low $80s. By mid-March, it was in the triple digits, closing above **$106**. By Friday, March 27, **Brent closed at $112.57**, its highest since 2022. The International Energy Agency called the situation, including the escalating threat to the Strait of Hormuz, *"the largest supply disruption in the history of the global oil market."*

The S&P 500's drawdown tracked the oil curve with uncanny precision. Between February 28 and March 27, it lost roughly $640 of index points. The VIX doubled.

DATE	SPX CLOSE	VIX CLOSE	MACRO CATALYST
Feb 27 (pre-war)	~7,002	19.86	n/a
Mar 12	yearly low	~25	SPX yearly low; Brent near $100
Mar 17 (window begins)	$6,716	22.37	Fourth week of drawdown
Mar 18	6,624	27.03	FOMC holds 3.5-3.75% (11-1; Miran dissent)
Mar 19	6,606	24.74	n/a
Mar 20	6,506	26.78	Iran strikes two oil tankers; SuperMicro scandal

DATE	SPX CLOSE	VIX CLOSE	MACRO CATALYST
Mar 23	6,581	26.15	n/a
Mar 24	6,556	25.65	n/a
Mar 25	6,592	27.04	n/a
Mar 26	6,477	28.23	Dow -800, fifth losing week, Russell 2000 correction
Mar 27	6,368	31.05 (31.65 HI)	Brent $112.57; weekend tail risk
Mar 30	**6,343 (6,317 LO)**	30.61	Capitulation Monday; late-day Pezeshkian / Trump peace signals

Sources for macro catalysts and daily closes: U.S. BLS CPI and PPI releases; Federal Reserve March FOMC statement; CNBC, Al Jazeera, NPR, Bloomberg reporting on the Iran war timeline; Britannica and Wikipedia entries for Operation Epic Fury and the 2026 Iran war; Investing.com historical SPX data.

Part 2, The capitulation that didn’t look like one

Monday, March 30 was not a dramatic trading session on the surface. The S&P opened at **$6,403.37**, traded down to an intraday low of **$6,316.91** at around 3:29 PM Eastern, and closed at **$6,343.72**, down 0.4% on the day, which is barely a blip by the standards of the prior week.

But the structure underneath was doing something specific. Three signatures, visible in our intraday options-market observations, together mark the print:

> SIGNATURE 1, DEALER GAMMA NEUTRALIZED TO ZERO
>
> Through most of March, the total gamma exposure on the dealer book had sat persistently negative, the classic “short-gamma” regime in which market-makers hedge by selling into down-moves and buying into up-moves, which mechanically amplifies volatility. On March 30, the sign was still negative, but the magnitude had collapsed to approximately zero. The dealer book was flat. The engine that had amplified the sell-off had run out of fuel.

> SIGNATURE 2, PUT FLOW EXHAUSTED
>
> The put-to-call volume ratio had peaked on March 19 at about **`1.59`** (and intraday on March 20 at roughly **`1.67`**), extreme versus the long-run average of 0.8-1.2. By March 30, the ratio had fallen to around 1.44, still elevated, but declining, even as the tape was still falling. Exhausted put-buying while prices still decline is one of the most reliable bottom signatures in the options market: the last put buyers have already bought.

> SIGNATURE 3, TRADE INTENSITY SPIKED
>
> Our intraday observation density on March 30 was the highest of any session in the prior two weeks, a proxy for trade intensity in the SPX options market. Spikes at capitulation lows are the observable echo of forced-selling, margin calls, stop-loss triggers, and rebalance flow clustering into the final hour before any afternoon reversal.

Together those three signatures said the same thing: the short-gamma amplifier that had been pulling the tape down all month had run out of power, the hedging demand that had been driving put flow had exhausted, and the trade intensity was spiking into the close. In a month this textbook, the only question left was what catalyst would flip the direction.

That catalyst arrived Monday afternoon and Monday night. Iran's President Masoud Pezeshkian told reporters he was open to ending the war with guarantees; an unconfirmed wire report circulated. Late Monday, Trump told the *New York Post* that the Iran war “will likely end soon” and that other nations were positioning to reopen the Strait of Hormuz. No formal agreement existed yet. But the distribution of possible Tuesday outcomes shifted.

The market went home on the low.

Part 3, The reversal day

Tuesday, March 31 was one of those sessions that trades into the record books in the first ten minutes.

The S&P opened at **`$6,395.88`**, gapping up $52 from Monday's close. Intraday, it ran to **`$6,539.05`**. It closed at **`$6,528.52`**, up **2.91% on the day**. Advance-decline breadth was 441 of 500 S&P constituents advancing. Ten of eleven sectors finished higher. The Nasdaq and Dow posted their best sessions since May 2025.

In the options market, the regime started to turn. The put/call volume ratio dropped to around 1.04. Total gamma exposure ended the session still mildly negative but with intra-session positive-gamma windows emerging, the first clean breaks above the zero line since mid-March. The short-gamma amplifier, which had helped drag the market down for 24 sessions, quietly began inverting.

The next five sessions, April 1,2,6,7, were grinders. Small positive days (+0.7%, +0.1%, +0.4%, +0.1%) as SPX climbed from $6,529 to $6,617 on steady ceasefire hopes and progressively declining VIX (25.25 → 24.54 → 23.87 → 24.17 → 25.78). The gamma regime transitioned: **April 6 showed the first clean session-long close above zero**, April 7 did it again. The dealer book was flipping from "selling into rallies" to "buying into dips", structural change.

April 8 delivered the move the structure had set up. Overnight, news broke that **Iran, the United States, and Israel had agreed to a two-week ceasefire, brokered by Pakistan, to begin Tuesday, April 8**. The S&P gapped open at **`$6,754`**, climbed intraday to **`$6,793`**, and closed at **`$6,782.81`**, up **2.51% on the session vs. April 7 close**. The VIX collapsed to 21.04 from 25.78, implied vol crush as put protection was unwound wholesale.

This was the gamma-squeeze apex. The structural fuel for it had been laid the prior two days, the dealer book was already long gamma when the ceasefire news hit, but the overnight news was what delivered the actual move. After April 8, the mechanical component of the rally began to fade. What came next was different.

Part 4, The rally that learned to absorb bad news

The remaining two weeks did not unfold the way the prior four had.

April 9 (Thursday): +0.62% to $6,824.66. Quiet grind higher. VIX 19.06, sub-20 for the first time since the war started.

April 10 (Friday): **March CPI released at 8:30 AM ET.** Year-over-year headline inflation had jumped from 2.4% in February to `3.3% in March`, the first CPI since the war began. Energy prices were up 10.9% for the month; gasoline was up 21.2%. Month-over-month headline CPI was 0.9%, the highest in years. A market that had been running scared of inflation for weeks should have reacted sharply. Instead, the S&P finished at $6,816.89, down just 0.11%. The VIX ticked up one point. The print was absorbed.

The explanation, visible only in the options structure, is that the dealer book had already absorbed it. Total gamma exposure had flipped persistently positive. Positive-gamma regimes dampen volatility: dealers sell on up-moves and buy on down-moves, compressing the range around the close. A 3.3% CPI print on a negative-gamma day in mid-March would have triggered a two-percent selloff. On a positive-gamma day in early April, it was absorbed inside a quarter-percent range.

April 13 (Monday) tested this thesis harder. Over the weekend, peace talks in Islamabad had collapsed. Monday morning, **the United States began a naval blockade of Iranian ports via the Strait of Hormuz**. Oil spiked. The S&P... rallied 1.02% to $6,886.24. A year earlier, a Hormuz blockade headline would have been a -3% day. The structural positioning absorbed it inside a few hours, and then the index closed near its session high.

At this point, April 13 close,14 sessions after the capitulation low, the tape had already climbed $568 from the bottom, or **+9.0%**.

Part 5, The three-catalyst stack that made new all-time highs

The final leg of the rally was a three-session catalyst stack that took the S&P through its prior all-time high from January 28.

TUESDAY, APRIL 14

March PPI released. Final-demand producer prices rose `0.5%` for the month, versus a Dow Jones consensus of 1.1%. Well below expectations. After the hot CPI print on April 10, a softer PPI was the beginning of a case that the first-round inflation impulse from the war might already be peaking. The S&P closed at **`$6,967.38`**, a new record close, beating the January 28 all-time high of $7,002.28 intraday and setting a new closing mark. The Nasdaq posted its 12th consecutive up session, the longest streak since 2009.

WEDNESDAY, APRIL 15

+0.80% to **`$7,022.95`**. The S&P crossed above $7,000 for the first time in history. Ceasefire entered its second week; markets continued to price in durable de-escalation.

THURSDAY, APRIL 16

Trump announced a 10-day truce between Israel and Hezbollah, scheduled to formally begin at 5:00 PM ET. Oil eased. SPX closed at **`$7,041.28`**, up 0.26%. Another record. Nasdaq extended its streak to 13 sessions, matching its January 9, 1992 all-time record.

FRIDAY, APRIL 17

+1.20% to **`$7,126.06`**. Session high **`$7,147.52`**. New closing all-time high.

The total move: from the March 30 intraday low of `$6,316.91` to the April 17 session high of `$7,147.52` = **+$830.61, or +13.15%, across 13 trading sessions**. The first close above the prior Jan 28 all-time intraday high of $7,002.28 came on April 15, eleven trading days after the bottom, the recovery-speed metric Cronk cited on CNBC.

Part 6, What our data saw that price charts didn't

Price charts are a lossy compression of markets. They tell you what happened to the last-traded price, and that is all. The options market,8,000+ SPX contracts across every expiration, bid/ask quotes revising tens of thousands of times per minute, flow sweeps and block prints, is the *structure* underneath, and it often tells a different story than the tape does.

Our platform captures that structure at sub-second resolution, every quote, every contract, every flow imbalance across the SPX chain. For the March 17 – April 13 window, we processed roughly `35,000 intraday observations` of the options market. Here is what that data shows that the tape alone did not.

The structure saw the bottom before the news did

The Pezeshkian peace-signal story broke late Monday afternoon on March 30, after the cash close. By that point, the three signatures, gamma neutralization, put flow exhaustion, trade-intensity spike, had already fired. The options market was telling a mean-reversion story by about 2:00 PM Eastern on March

30. The news that catalyzed the reversal was the trigger; the dealer book had already set the table.

The gamma regime flipped before the ceasefire was announced

The U.S.-Iran-Israel ceasefire starting April 8 was the news that delivered the April 8 gap-up. But the mechanical setup had already flipped. Our data shows **April 6 and April 7 sessions both closed with positive intra-day gamma readings**, the first clean positive closes since mid-March. By the time the ceasefire news hit the tape overnight Monday-Tuesday, the dealer book was already positioned to amplify the move on the upside rather than sell into it.

The April 10 CPI was a non-event *because of the dealer book*

Headline inflation jumping from 2.4% to 3.3% month-over-month should have produced a sharp selloff. It did not. The reason is mechanical, not fundamental. Positive-gamma regimes compress price moves by construction: dealers are selling into the up-moves and buying into the down-moves, flattening the range. Our gamma readings show April 10's book sat firmly positive. The CPI was a fundamental signal; the dealer book dampened it. A more conventional newswire-driven explanation ("the market had already priced it") is technically correct but tells you nothing about *how*. The mechanism is the gamma.

The put-call volume ratio painted a cleaner capitulation arc than the price did

From March 19 peak (~1.59 in the clean data) through April 9 trough (~0.92), the put-to-call volume ratio traced a clean descent. Compare that to the price chart, which wobbled through four flat sessions before reversing. The flow data was decelerating as early as March 23-24, well before the price turned on March 30. Put-volume ratio exhaustion is a leading indicator of price reversal. In this rally, it led by roughly one to two weeks.

What the April 17 close shows

The dealer gamma book closed April 13 **modestly positive**, pin regime. The sessions since have seen the index climb through what was, on April 13, relatively thin dealer-wall territory above $6,910 (most of the positive gamma concentration was at and just above the April 13 spot of $6,886). Our Apr 17 intraday observations show the call wall at **`$7,125-$7,145`**, accumulated entirely within the last four trading sessions as new call open interest was written. That concentration is what defined Friday's intraday ceiling (multiple rejections from $7,125).

> **The asymmetry going forward:** the accumulation is dense at $7,100-$7,150 (option buyers have bought upside calls there, dealers are short those calls). If price breaks through the $7,150 level with enough velocity, the short-gamma position at that strike would force dealers to buy underlying aggressively, a textbook upside gamma squeeze. Below $6,800, our data shows much thinner dealer support; the put walls that would have cushioned a drawdown are now either depleted from the March unwind or priced far OTM. An exogenous shock, a breakdown in the ceasefire, a hotter-than-expected April CPI print (May 13), or an escalation the market hasn't priced, would land on a relatively unprotected book.

Part 7, Where this rally ranks

EVENT	DRAWDOWN	DAYS TO RETRACE → ATH
March-April 2026 (Iran war)	**-9.8%**	**11 trading days**
March 2020 (COVID)	-33.9%	~108 trading days
December 2018 (Fed / trade war)	-19.8%	~85 trading days
August 2015 (China devaluation)	-12.4%	~175 trading days
October 1987 (Black Monday)	-33.5%	~400 trading days
October 2007 → March 2009 (GFC)	-56.8%	~1,375 trading days

Sources: S&P Dow Jones Indices historical index data; Yahoo Finance ^GSPC daily OHLC; Macrotrends "S&P 500 - Historical Chart by Year" compilation; Visual Capitalist, "Every S&P 500 Market Crash Since 1950" (2024); Landmark Wealth Management, "10 Worst S&P 500 One-Day Declines (1981-2025)"; Wells Fargo Wealth & Investment Management CIO commentary, CNBC April 16, 2026.

The 2026 drawdown was not the deepest in recent memory. It was, however, the fastest recovery per unit of drawdown. At 11 trading days from bottom to new record, the recovery is roughly **10× the speed** of the next-fastest comparable (Dec 2018). Only the Dot-com bottom retrace of October 2002 is in the same speed bracket, and that required a two-plus-year grind to fully hold.

There are three characteristics that distinguish this cycle from all of the above:

1. **The cause was singular and externally resolved.** COVID was a pandemic with no clear endpoint at the bottom. The GFC was a balance-sheet crisis with multi-year unwind. The 2026 drawdown had exactly one cause (the Iran war) and the cause was formally paused by a ceasefire on April 8, a binary, public event.

2. **The dealer book was not damaged.** The 2008 and COVID crashes both ran through forced unwinds that destroyed dealer capacity for weeks. The 2026 drawdown was mostly repositioning, put buying, volatility demand, some short equity exposure, that could unwind as fast as it had built up, because it hadn't impaired intermediation. Our intraday positioning data shows this directly: the book was “positioned” short, not “broken” short.

3. **The macro catalysts stacked in the same direction.** Between the April 8 ceasefire, the April 10 CPI print (absorbed), the April 13 blockade (ignored), the April 14 PPI miss, the April 15 breakthrough of 7,000, and the April 16 Israel-Hezbollah truce announcement, the tape was handed a six-session catalyst stack with no countering negative news. A different Fed signal, a Middle East re-escalation, or an earnings-season disaster could have broken the rally at any point. None happened.

Part 8, What to watch from here

The rally is real, in the specific sense that the dealer positioning data shows genuine new long-call accumulation through April 9-17, not just short-covering on March 31 through April 8. In the short-covering phase, the open interest on the SPX options chain *contracted*: puts that had been bought in the panic were unwound and expired worthless. In the accumulation phase, the open interest has *grown*: new long calls have been written, and the dealer book has shifted from “rolling off put inventory” to “selling calls to new speculators.”

That growth in open interest is the direct measurement of fresh money coming into the market. Our data shows SPX total option open interest expanded by roughly **`1.0 million contracts`** between April 8 close and April 13 close, a

~16% increase in total OI. For context, that is not the flow signature of a short squeeze. It is the flow signature of real positioning.

What changes the character from rally to correction would be a change in that flow. Three specific indicators we will be watching:

- **The $7,125-$7,145 call wall.** If spot holds below it for two to three more sessions, the dealer short-call position builds and the asymmetric upside reaction to a breakout grows. If spot pushes through on momentum, the short-gamma hedging accelerates upside (textbook upside squeeze). If spot rejects repeatedly and call open interest *closes out* (rather than rolls higher), the pin weakens and downside re-opens.
- **Total gamma sign stability.** The April 13 reading was modestly positive. Any session closing with total gamma cleanly negative, which would require either a meaningful downside price move, a spike in put buying, or a mass call expiry, flips the regime back to vol-amplifying. This is the single fastest-changing risk indicator in the dataset.
- **The April CPI print on May 13.** April CPI covers the first full month *after* the ceasefire. Energy prices should start to ease. A soft print reinforces the disinflation narrative that has carried the tape since April 14. A hot print breaks the three-catalyst stack and tests whether the positive-gamma regime can absorb a second bad CPI without cracking.

> **The single most important thing this analysis does not cover** is the April 21 ceasefire expiry. The current U.S.-Iran ceasefire was structured as a two-week agreement from April 8 and expires April 21. Extension (or not) is an event risk that lands squarely inside the next three trading sessions. Our data can say nothing predictive about the outcome of those negotiations. It

> can say that **the dealer book is not hedged for a reacceleration of the war**. If the ceasefire breaks down, the downside cushion that existed on March 27 (deeply negative gamma, heavy put-wall protection) has been entirely dismantled by the rally.

The rally is real. It is also unguarded.

Appendix, Data and Methodology

The quantitative claims in this paper are sourced as follows:

Daily SPX OHLC and VIX

Investing.com historical data, cross-referenced with Yahoo Finance and CBOE daily records. Where our internal options-market record disagreed with public close data by more than $3, we deferred to the public sources. The one such case in this window was March 30, where our intraday capture appears to have missed the final 30 minutes of trading.

Option microstructure, dealer positioning, gamma exposure, put-call flow ratios

Our internal SPX options-market observations covering March 17 through April 13. Per-session measurements are aggregated for downstream analysis.

Gamma exposure conventions and caveats

Our total gamma-exposure measurements use the industry-standard convention in which call open interest contributes positively and put open interest contributes negatively, with the interpretation that positive totals correspond to a long-gamma dealer book (pinning regime) and negative totals to a short-gamma book (amplifying regime). We audited 15 randomly sampled measurements across five sessions (Mar 17, Mar 27, Mar 30, Apr 8, Apr 13) and confirmed that the sum of per-strike GEX matched the reported total within rounding error in all 15 cases.

An end-of-session artifact in the data was discovered and filtered out during this analysis: the final measurements of certain sessions (confirmed on April 9 and April 13) contain mis-scaled far-OTM quarterly-expiration option contributions that do not reconcile with the intra-session mid-day values. Our quality filter rejects observations with implausible far-OTM contributions, which reliably catches these artifacts. Within-session mid-day numbers are clean.

Because of the artifact issue, this paper makes no quantitative claim about absolute dollar gamma magnitudes in the dealer book, and instead uses signed (negative / positive / near-zero) and ordinal (strike-level rankings) characterizations. The within-session flip-to-positive on April 6 and April 7, and the persistent positive close on April 13, are defensible sign-level claims. Absolute magnitudes are presented only where cross-checked with audit data.

Put/call volume ratio methodology note

During the artifact-filtering step, observations that contained mis-scaled GEX values at session open or close were dropped. This had a secondary effect on the daily aggregated put/call volume ratio, because certain dropped records contained elevated peak put-flow readings. The cleaned March 19 session peak settled at ~1.59, with a higher intraday peak on March 20 at ~1.67; an earlier unfiltered calculation had surfaced a March 19 spike of 2.17, which appears to have been concentrated in the same minute as an artifact-contaminated GEX record and was dropped together with it. Post-filter values are used throughout; the qualitative picture (panic put-buying peaking Mar 19-20 and declining into the Mar 30 low) is unchanged.

Macro events and timeline

Reuters, CNBC, Al Jazeera (including its March 12, 2026 Minab school strike investigation and its multiple reports on ceasefire developments), NPR, Bloomberg, the Federal Reserve's March 18 FOMC statement, U.S. BLS CPI and PPI release archives, the

White House readout of Operation Epic Fury (“Peace Through Strength” April 2026 release), Britannica and Wikipedia entries for the 2026 Iran war and the 2026 Minab school attack, Amnesty International's March 2026 report on the Minab strike, the OHCHR statement of UN experts on the strike, TIME's reporting, and the CSIS analysis “Operation Epic Fury and the Remnants of Iran's Nuclear Program.”

Historical comparables and recovery-speed context

S&P Dow Jones Indices historical index data; Macrotrends “VIX Volatility Index (1990-2026)” historical chart; Visual Capitalist, “Every S&P 500 Market Crash Since 1950”; Wells Fargo Wealth & Investment Management CIO Darrell Cronk, CNBC interview April 16, 2026; Landmark Wealth Management, “10 Worst S&P 500 One-Day Declines (1981-2025).”

Prepared by the ZDtE Research Desk. For correspondence on methodology, microstructure derivation, or data access, contact the platform at zdte.ai. Not investment advice; no recommendation, solicitation, or representation of future market behavior is made or implied.

Frequently asked questions

What caused the March 2026 SPX drawdown?

The February 28 outbreak of the Iran war drove oil above $112 and the S&P 500 down roughly 9.8% over four weeks, with the VIX doubling. Our options data adds the mechanism: a persistently short-gamma dealer book whose hedging amplified the decline.

How fast was the recovery to new all-time highs?

Eleven trading days from the March 30 low to the first close above the prior all-time high — roughly ten times faster than the next-fastest comparable (December 2018). The trough-to-peak move was +13.15% in 13 sessions.

What did dealer positioning show at the bottom?

Three signatures on March 30: dealer gamma estimated near zero after weeks of negative readings, put-flow exhaustion (the put/call ratio declining while price still fell), and a spike in trade intensity. Together they marked the amplifier running out of fuel — before the peace-signal headlines broke.

SUMMARY BRIEF

For a shorter journalist-tone version, six sections,8-min read, same data:

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