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# Nasdaq

# Straddles and Strangles: It's All Volatility to Us

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As with all investments, your capital is at risk

# Straddles & Strangles It's All Volatility to Us

Kevin Davitt - Nasdaq Russell Rhoads - ListDer

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#### Outline

- Nasdaq-100 (NDX) Option Market Stats
- 2024 Short Dated Option Review
- Questions / Q&A

### Nasdaq-100 Options

#### **2024 Highlights**

- NDX option volume up by 39% versus 2023
- Volume is 122% higher than 2022 the year daily expirations became available
- Index (+ ETF) options have been the growth tools industry-wide over the past 3 years

#### **At-The-Money Straddle Testing**

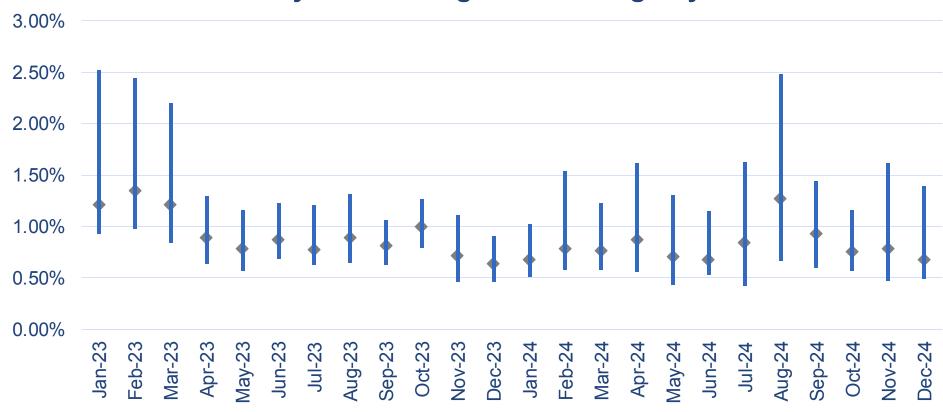
- Use midpoint of closing ATM bid-ask spread to determine straddle values
- Each observation assumes 2.00 points of slippage
- We also record the straddle as a percent of NDX and price changes

#### 1 Day Straddles

| 1-Day Short ATM Straddle P/L 2023 vs. 2024 |  |         |          |         |           |  |  |
|--|--|---------|----------|---------|-----------|--|--|
| Year                                       |  | Max     | Min      | Avg     | Total     |  |  |
| 2023                                       |  | +225.89 | (289.29) | (0.47)  | (97.85)   |  |  |
| 2024                                       |  | +333.11 | (603.34) | (14.69) | (3510.47) |  |  |

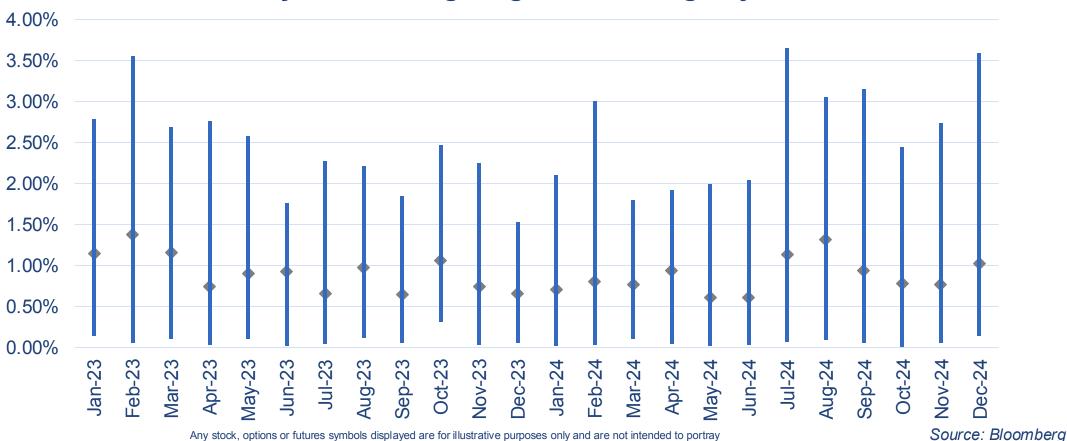
| 1-Day Long ATM Straddle P/L 2023 vs. 2024 |       |                   |        |          |  |  |
|---|-------|-------------------|--------|----------|--|--|
| Year                                      | Max   | c Min             | Avg    | Total    |  |  |
| 2023                                      | +285. | <b>29</b> (229.89 | (3.53) | (850.15) |  |  |
| 2024                                      | +599. | 34 (337.11        | +10.69 | +2554.47 |  |  |

#### NDX 1-Day Straddle High/Low/Average By Month



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#### NDX 1-Day Price Change High/Low/Average By Month



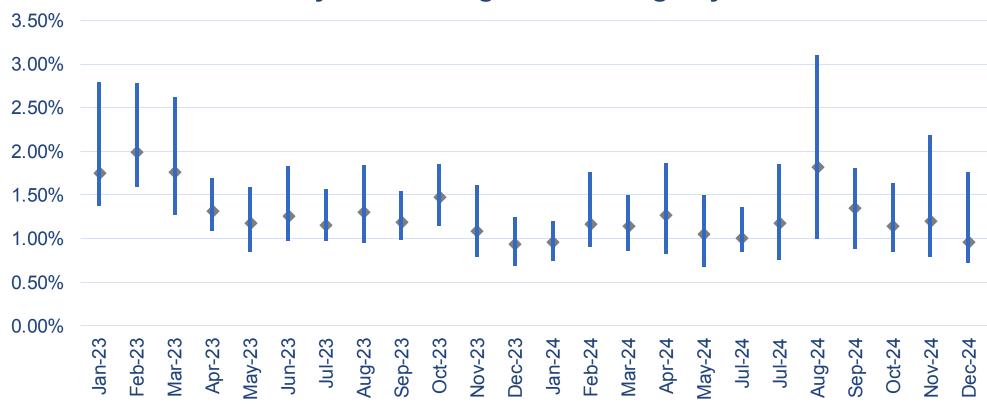
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#### 2 Day Straddles

|      | 2-Day Sh | ort ATM       | <b>Straddle P</b> | /L 2023 vs. | 2024      |
|------|----------|---------------|-------------------|-------------|-----------|
| Year |          | Max           | Min               | Avg         | Total     |
| 2023 | +3       | 22.13         | (589.24)          | +8.07       | +1911.56  |
| 2024 | +3       | <b>375.67</b> | (1048.05)         | (19.18)     | (4545.88) |

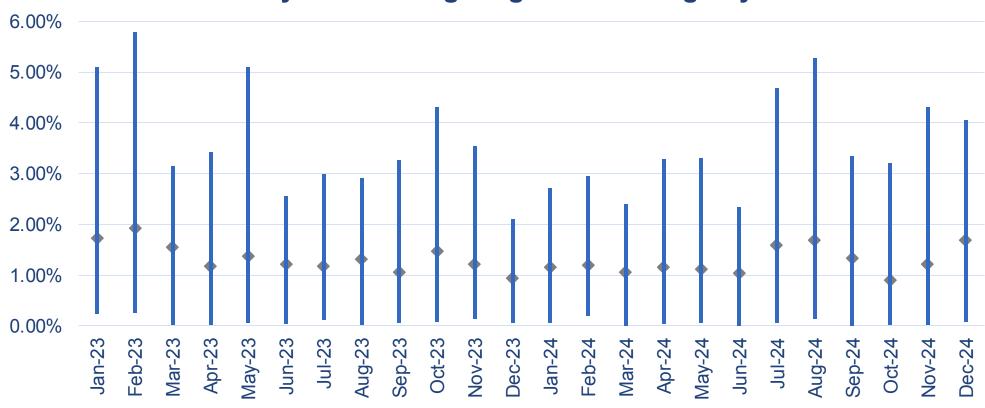
| 2-Day Long ATM Straddle P/L 2023 vs. 2024 |  |          |          |         |           |  |
|---|--|----------|----------|---------|-----------|--|
| Year                                      |  | Max      | Min      | Avg     | Total     |  |
| 2023                                      |  | +585.24  | (326.13) | (11.58) | (2859.56) |  |
| 2024                                      |  | +1044.05 | (379.67) | +15.18  | +3589.88  |  |





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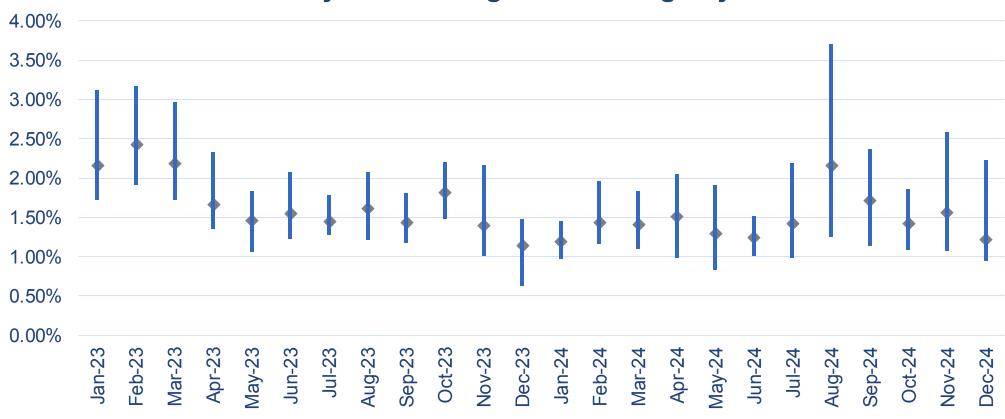


#### 3 Day Straddles

| 3-Day Short ATM Straddle P/L 2023 vs. 2024 |  |         |          |         |           |  |
|--|--|---------|----------|---------|-----------|--|
| Year                                       |  | Max     | Min      | Avg     | Total     |  |
| 2023                                       |  | +277.85 | (525.41) | +0.87   | +206.89   |  |
| 2024                                       |  | +520.52 | (685.17) | (17.92) | (4279.95) |  |

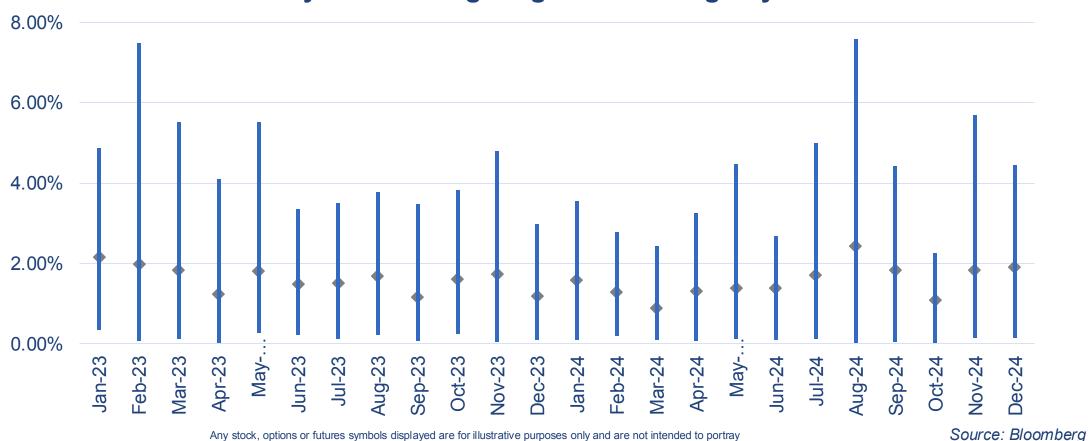
| 3-Day Long ATM Straddle P/L 2023 vs. 2024 |  |         |          |        |           |  |  |
|---|--|---------|----------|--------|-----------|--|--|
| Year                                      |  | Max     | Min      | Avg    | Total     |  |  |
| 2023                                      |  | +521.41 | (281.85) | (4.69) | (1154.89) |  |  |
| 2024                                      |  | +681.17 | (524.52) | +13.92 | +3323.95  |  |  |





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NDX 3-Day Price Change High/Low/Average By Month



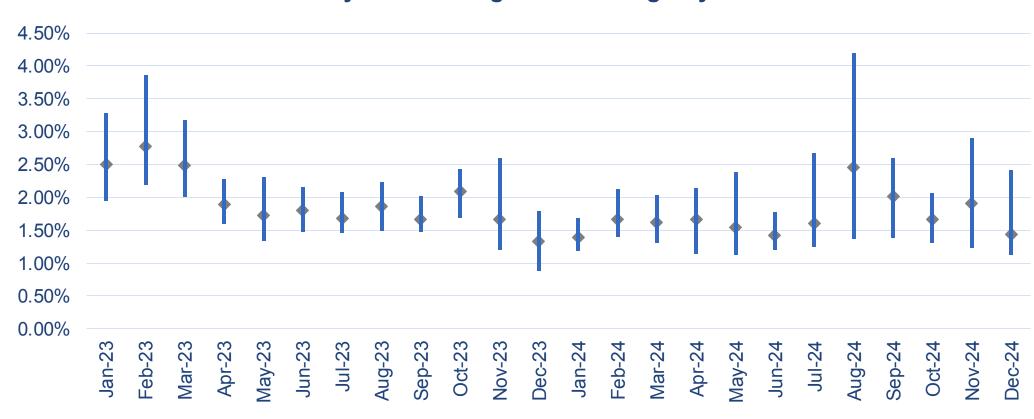
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#### 4 Day Straddles

| 4-Day Short ATM Straddle P/L 2023 vs. 2024 |  |         |          |         |           |  |
|--|--|---------|----------|---------|-----------|--|
| Year                                       |  | Max     | Min      | Avg     | Total     |  |
| 2023                                       |  | +277.85 | (525.41) | +0.87   | +206.89   |  |
| 2024                                       |  | +520.52 | (685.17) | (17.92) | (4279.95) |  |

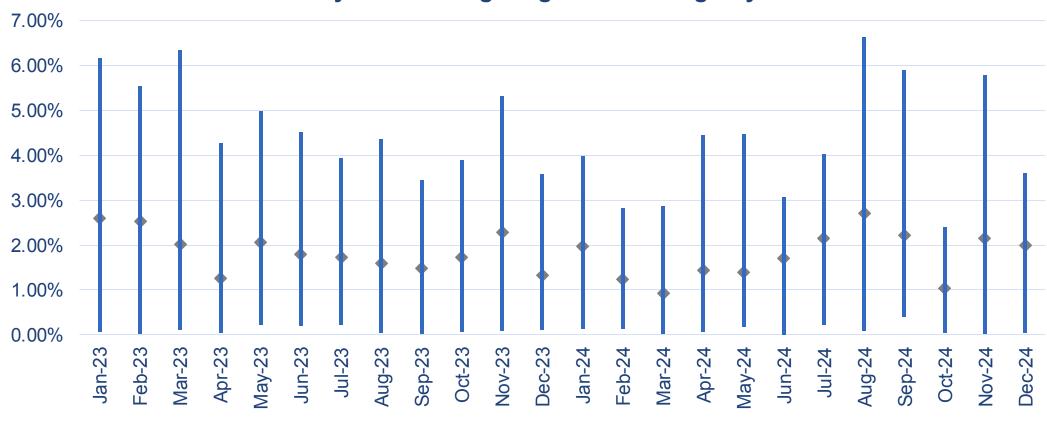
| 4-Day Long ATM Straddle P/L 2023 vs. 2024 |  |         |          |        |           |  |  |
|---|--|---------|----------|--------|-----------|--|--|
| Year                                      |  | Max     | Min      | Avg    | Total     |  |  |
| 2023                                      |  | +521.41 | (281.85) | (4.69) | (1154.89) |  |  |
| 2024                                      |  | +818.13 | (383.61) | +8.38  | +1837.55  |  |  |

#### NDX 4-Day Straddle High/Low/Average By Month



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NDX 4-Day Price Change High/Low/Average By Month



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#### 5 Day Straddles

| 5-Day Short ATM Straddle P/L 2023 vs. 2024 |  |         |          |         |           |  |
|--|--|---------|----------|---------|-----------|--|
| Year                                       |  | Max     | Min      | Avg     | Total     |  |
| 2023                                       |  | +277.85 | (525.41) | +0.87   | +206.89   |  |
| 2024                                       |  | +520.52 | (685.17) | (17.92) | (4279.95) |  |

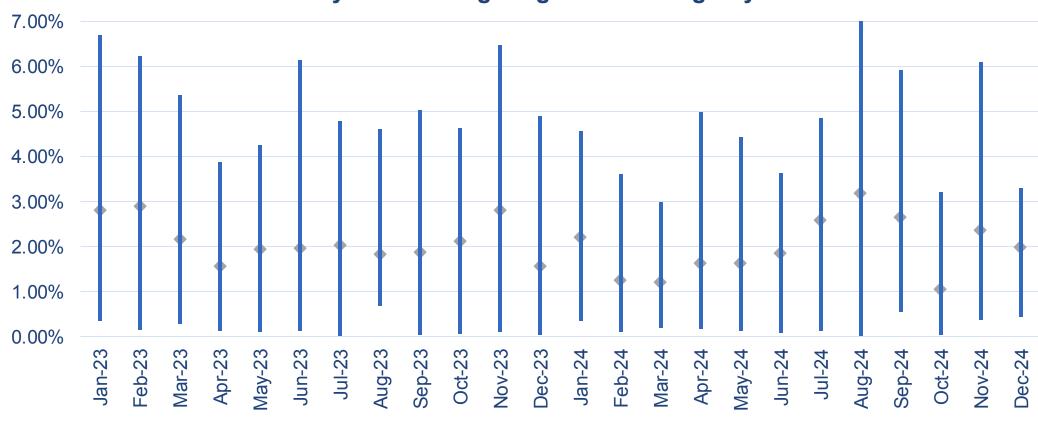
| 5-Day Long ATM Straddle P/L 2023 vs. 2024 |         |          |        |           |  |  |  |
|---|---------|----------|--------|-----------|--|--|--|
| Year                                      | Max     | Min      | Avg    | Total     |  |  |  |
| 2023                                      | +521.41 | (281.85) | (4.69) | (1154.89) |  |  |  |
| 2024                                      | +818.13 | (383.61) | +8.38  | +1837.55  |  |  |  |

#### NDX 5-Day Straddle High/Low/Average By Month



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#### NDX 5-Day Price Change High/Low/Average By Month



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#### **Strangle Testing**

- Use midpoint of ATM straddle pricing divided by NDX level to select strike prices
- Each observation assumes 2.00 points of slippage

#### 1 Day Strangles

| 1-Day Short ATM% Strangle P/L 2023 vs. 2024 |  |         |          |         |           |  |
|---|--|---------|----------|---------|-----------|--|
| Year  |  | Max     | Min      | Avg     | Total     |  |
| 2023  |  | +82.10  | (242.59) | (3.51)  | (842.20)  |  |
| 2024  |  | +114.20 | (546.39) | (17.79) | (4327.08) |  |

| 1-Day Long ATM% Strangle P/L 2023 vs. 2024 |  |         |          |        |          |  |  |
|--|--|---------|----------|--------|----------|--|--|
| Year                                       |  | Max     | Min      | Avg    | Total    |  |  |
| 2023                                       |  | +238.59 | (86.10)  | (0.49) | (105.80) |  |  |
| 2024                                       |  | +542.39 | (118.20) | +13.79 | +3371.08 |  |  |

#### 2 Day Strangles

| 2-Day Short ATM% Strangle P/L 2023 vs. 2024 |         |          |         |           |  |
|---|---------|----------|---------|-----------|--|
| Year  | Max     | Min      | Avg     | Total     |  |
| 2023  | +96.05  | (466.91) | +5.03   | +1118.55  |  |
| 2024  | +164.50 | (587.54) | (12.76) | (3063.39) |  |

| 2-Day Long ATM% Strangle P/L 2023 vs. 2024 |     |          |            |              |  |
|--|-----|----------|------------|--------------|--|
| Year                                       | M   | ax N     | Min Av     | g Total      |  |
| 2023                                       | +46 | 2.91 (10 | 0.05) (9.0 | 3) (2066.55) |  |
| 2024                                       | +58 | 3.54 (16 | 8.50) +8.7 | 76 +2107.39  |  |

#### 3 Day Strangles

| 3-Day Short ATM% Strangle P/L 2023 vs. 2024 |         |          |        |          |  |  |
|---|---------|----------|--------|----------|--|--|
| Year Max Min Avg Total                      |         |          |        |          |  |  |
| 2023  | +114.40 | (498.74) | +6.83  | +1478.66 |  |  |
| 2024  | +199.45 | (927.45) | (1.27) | (220.40) |  |  |

| 3-Day Long ATM% Strangle P/L 2023 vs. 2024 |  |         |          |         |           |  |
|--|--|---------|----------|---------|-----------|--|
| Year Max Min Avg Total                     |  |         |          |         |           |  |
| 2023                                       |  | +494.74 | (118.40) | (10.83) | (2426.66) |  |
| 2024                                       |  | +923.45 | (203.45) | (2.73)  | (735.60)  |  |

#### 4 Day Strangles

| 4-Day Short ATM% Strangle P/L 2023 vs. 2024 |         |          |        |          |  |
|---|---------|----------|--------|----------|--|
| Year  | Max     | Min      | Avg    | Total    |  |
| 2023  | +119.85 | (383.39) | +8.42  | +1953.85 |  |
| 2024  | +225.45 | (693.94) | (2.77) | (607.47) |  |

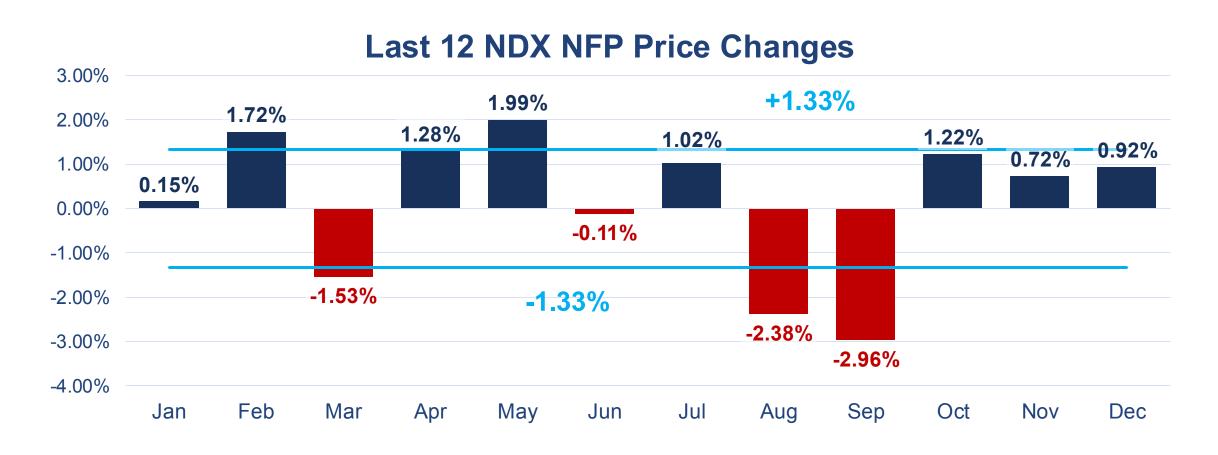
|      | 4-Day Long ATM% Strangle P/L 2023 vs. 2024 |          |         |           |  |  |
|------|--|----------|---------|-----------|--|--|
| Year | Max  | Min      | Avg     | Total     |  |  |
| 2023 | +379.39                                    | (123.85) | (12.42) | (2901.85) |  |  |
| 2024 | +689.94                                    | (229.45) | (1.23)  | (348.53)  |  |  |

#### **5 Day Strangles**

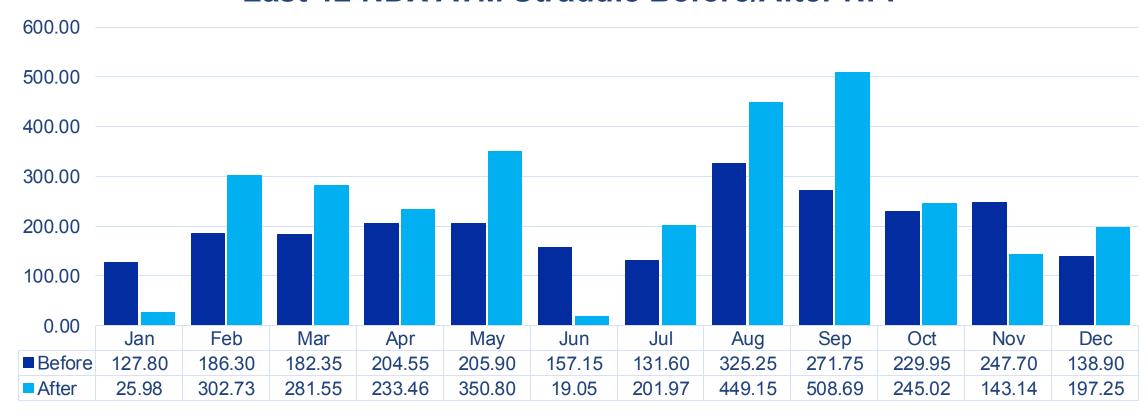
| 5-Day Short ATM% Strangle P/L 2023 vs. 2024 |  |         |          |       |          |
|---|--|---------|----------|-------|----------|
| Year  |  | Max     | Min      | Avg   | Total    |
| 2023  |  | +131.55 | (450.71) | +8.95 | +2234.62 |
| 2024  |  | +249.85 | (847.83) | +2.47 | +522.08  |

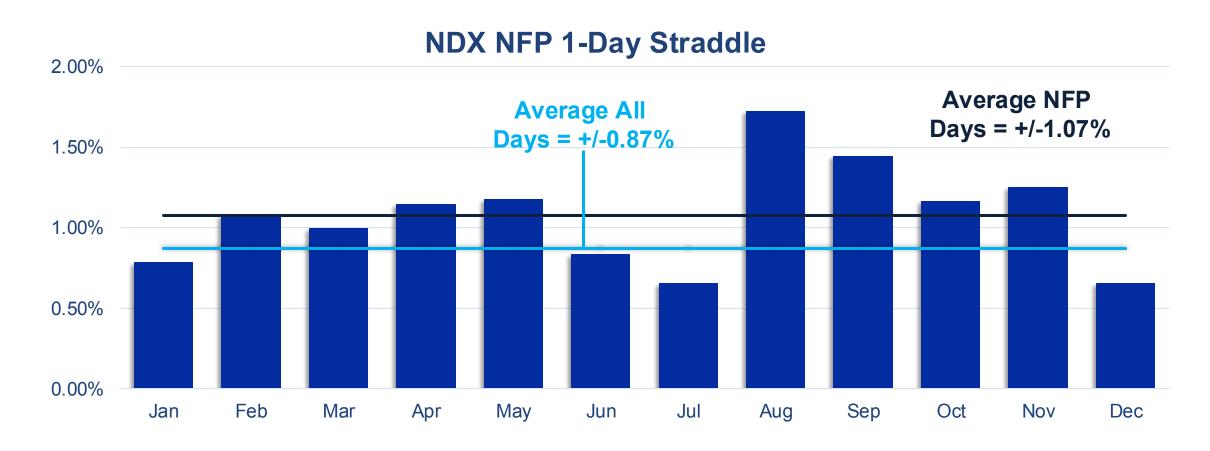
| 5-Day Long ATM% Strangle P/L 2023 vs. 2024 |  |         |          |         |           |
|--|--|---------|----------|---------|-----------|
| Year                                       |  | Max     | Min      | Avg     | Total     |
| 2023                                       |  | +446.71 | (135.55) | (12.95) | (3182.62) |
| 2024                                       |  | +843.83 | (253.85) | (6.47)  | (1478.08) |

- We use this data to explore option pricing and market reactions around major economic events
- Last Friday was the December 2024 Non-Farm Payroll (NFP) report
- Much like earnings announcement, the historical look uses the last twelve observations



#### Last 12 NDX ATM Straddle Before/After NFP





#### **Questions / Contact**

Questions?
(Any market related topic is fine)

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YouTube - Academic Market Insights