



# San Diego Chapter AAII

November 8, 2025

## Practical Applications of Bollinger Bands

Zoë Bollinger, Vice President and Portfolio Manager, Bollinger Capital Management



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# San Diego Chapter Meeting

## Agenda

November 8, 2025

- 9:00 am – Welcome and Opening Remarks – Rob Bernstein, President – AAI-San Diego Chapter
- 9:10 am – Market Update – Rob Bernstein
- 9:20 am – **“Practical Applications of Bollinger Bands”**, presented by Zoë Bollinger, Vice President and Portfolio Manager, Bollinger Capital Management
- 11:00 am – Adjourn
- 11:15 am – No-Host Lunch – Corner Bakery Café at the Westfield UTC Mall



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# Thank You!!



Thank you, **Jan Ouren**, for your seven years of service to the San Diego Chapter. From 2018 to 2025 Jan served in the following capacities:

- Vice President
- Secretary
- Membership



# The San Diego AAII Board



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\* Members of the Program Committee

# Upcoming Events

All meetings will be held in person at the Good Samaritan Church in La Jolla, CA.



## January 10, 2026 - **Special Member Appreciation Event**

- 9 am – 11 am: **“2026 Economic Update”** presented by Andrew Reilly, Market Director, Principal Global Investors
- 11 am – 1 pm: **Hosted lunch** and presentation **“Understanding Recent Changes to the Tax Code”** (in person only)



**February 14, 2026 – “The Ins and Outs of Financial Planning”**, presented by Steve Chen, Founder and President, Boldin

Current calendar can be found at [www.aaiisandiego.com](http://www.aaiisandiego.com)



# Special Event

## 2025 San Diego CEO Forum

WEDNESDAY, NOVEMBER 19

3:30 - 6:00 PM PST

UCSD RADY SCHOOL OF MANAGEMENT

10065 Scholars Dr N | San Diego

RECEPTION - 6:00 - 7:30 PM PST

RIDGEWALK SOCIAL

10000 Hopkins Dr | San Diego

Hosted By:



CFA Society  
San Diego



AAII Local  
Chapters

UC San Diego

RADY SCHOOL OF MANAGEMENT

### Speakers:

- Greg Garrabrants, CFA, President /CEO of Axos Financial Inc.
- Robert Dawson, CEO of RF Industries Ltd.
- Pat Miles, Chairman /President /CEO of Alphatec Holdings Inc. dba Atec Spine
- Dr. Helen Torley, President/ CEO of Halozyme Therapeutics Inc.

### Registration

- Online at [www.aaiisandiego.com](http://www.aaiisandiego.com)
- \$30 / person



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# Options Trading SIG

## Next Meeting

### Option Basics: Terminology and Fundamentals

**Saturday November 22, 2025 at 9am PT via ZOOM**

Special Interest Group information can be found at [www.aaiisandiego.com](http://www.aaiisandiego.com)

#### Previous Meetings:

- **Option Basics I: Terminology and Fundamentals (Bruce Ennis)**
- **Option Basics II: Buying and Selling Options (Bruce Ennis)**
- **Trading Calendar Spreads I and II (Dan Sheridan)**
- **Insights on Options (Larry McMillan)**
- **The Wheel Strategy (Bruce Ennis)**

SIG information can be found at [www.aaiisandiego.com](http://www.aaiisandiego.com)



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# Risk Management SIG

## Risk Management SIG Survey – Key Take Aways

- 26 responses
- Majority of attendees prefer online meeting format (77%)
- Meet at least quarterly (73%)
- Prefer content presented by experienced investors or professionals (88%)
- Topics of most interest:
  - Allocation strategies and diversification
  - Drawdown control and capital preservation
  - Market Timing and technical indicators
- 58% expressed interest in investing course (technical analysis, breadth, portfolio construction, drawdown management, business cycle analysis)

2026 Risk Management SIG Calendar to be published soon. Email [rob@rgbcapitalgroup.com](mailto:rob@rgbcapitalgroup.com) to be included on the Risk Management SIG distribution list.

SIG information can be found at [www.aaiisandiego.com](http://www.aaiisandiego.com)



# Flexible Meeting Fees

Thank you for supporting the chapter via Flexible Meeting Fee program!!

- We encourage everyone to contribute to sustain chapter operations.
- Your contributions should reflect the value you derive from attending.
- Contribution Options:
  - **Pay as you go** – pay each meeting
  - **Annual contribution** – make a larger contribution to cover multiple meetings
- Contributions may qualify as Qualified Charitable Distributions (QCD) offering potential tax benefits.
- Make payment for today's meeting by
  - Paying in **cash**
  - Giving us a **check**
  - Using the **QR code** to the right which takes you to our PayPal account.
  - Visit [www.aaiisandiego.com](http://www.aaiisandiego.com) for online payment



# Market Update

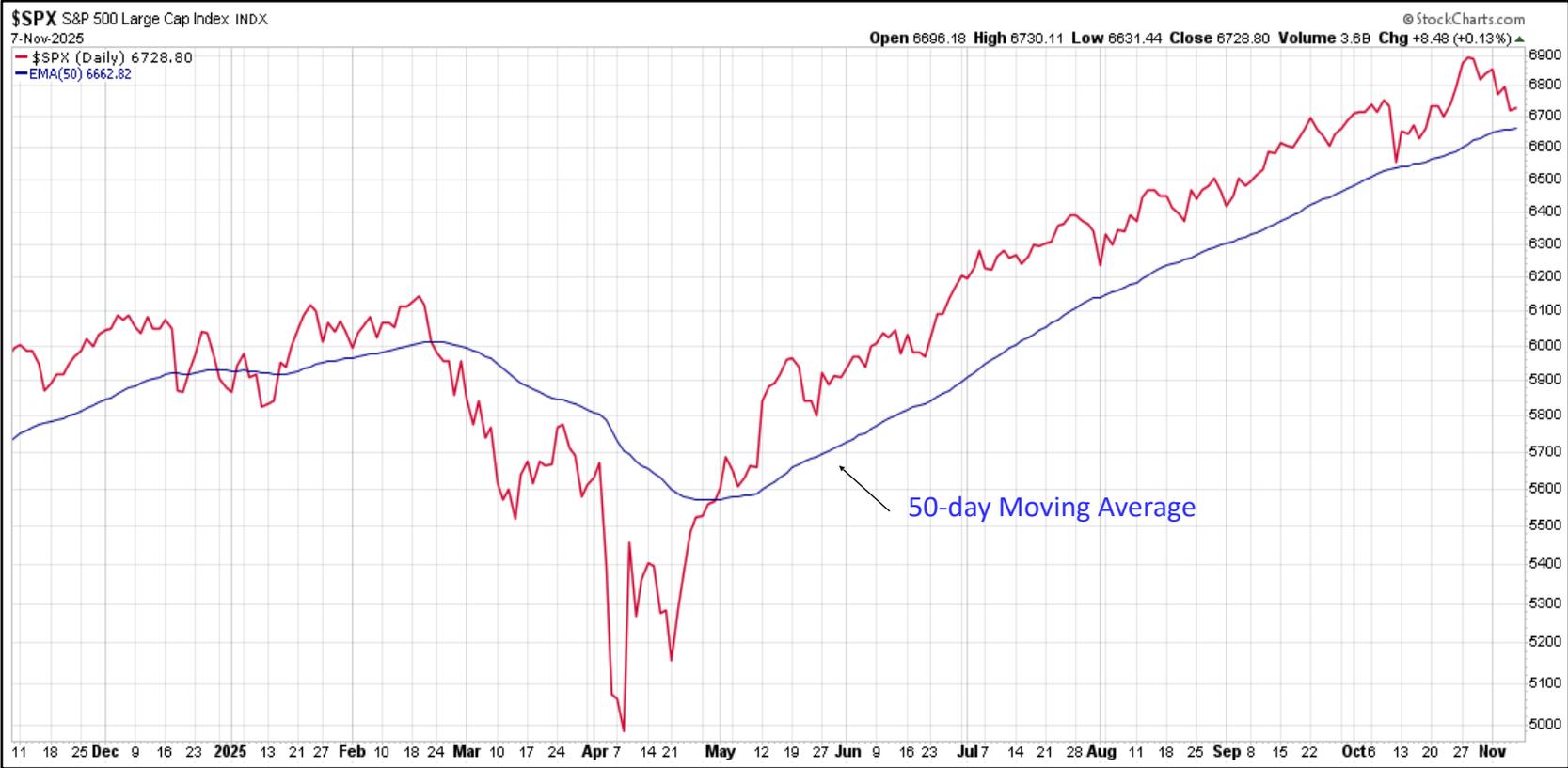
## by Rob Bernstein

Presented to the San Diego Chapter of AAI – November 8, 2025

The following market data is provided for general educational and discussion purposes only. This document does not constitute an offer to sell or a solicitation to buy a security, and is not an offer to provide investment advice. Past performance is not indicative of future results.

# S&P 500 Composite Index

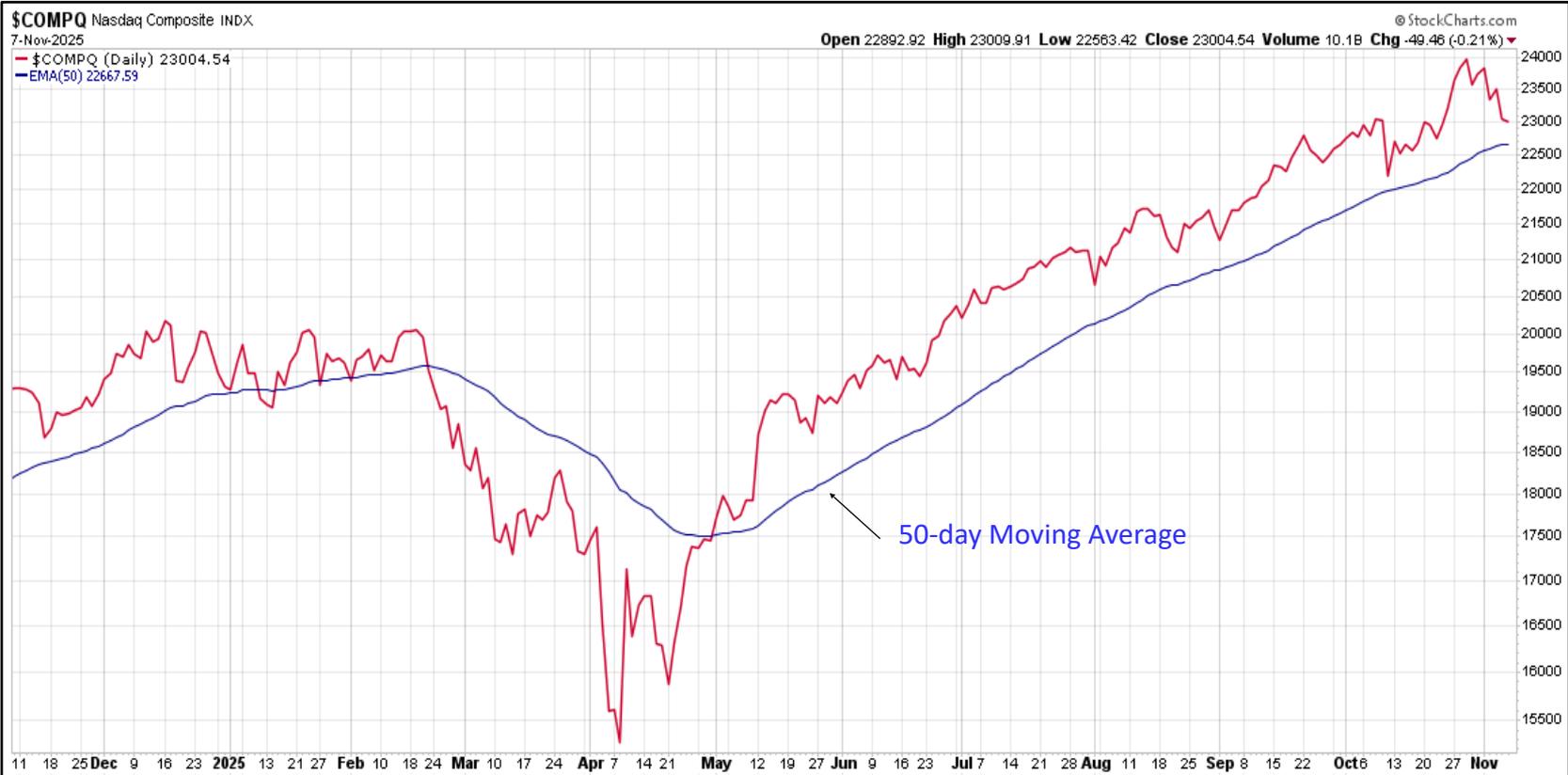
## One-Year Chart



Source: StockCharts.com

# Nasdaq Composite Index

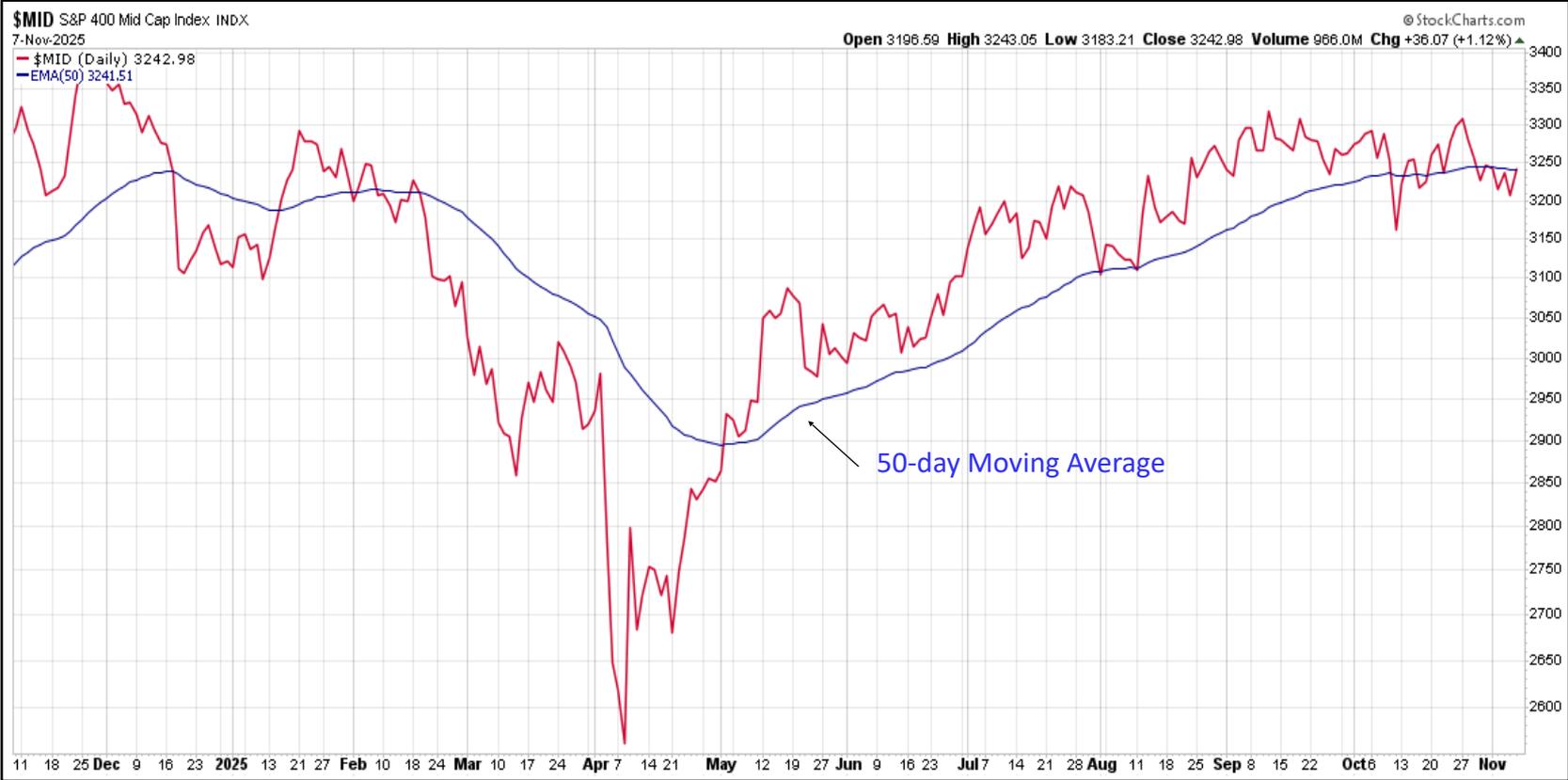
## One-Year Chart



Source: StockCharts.com

# S&P 400 Index

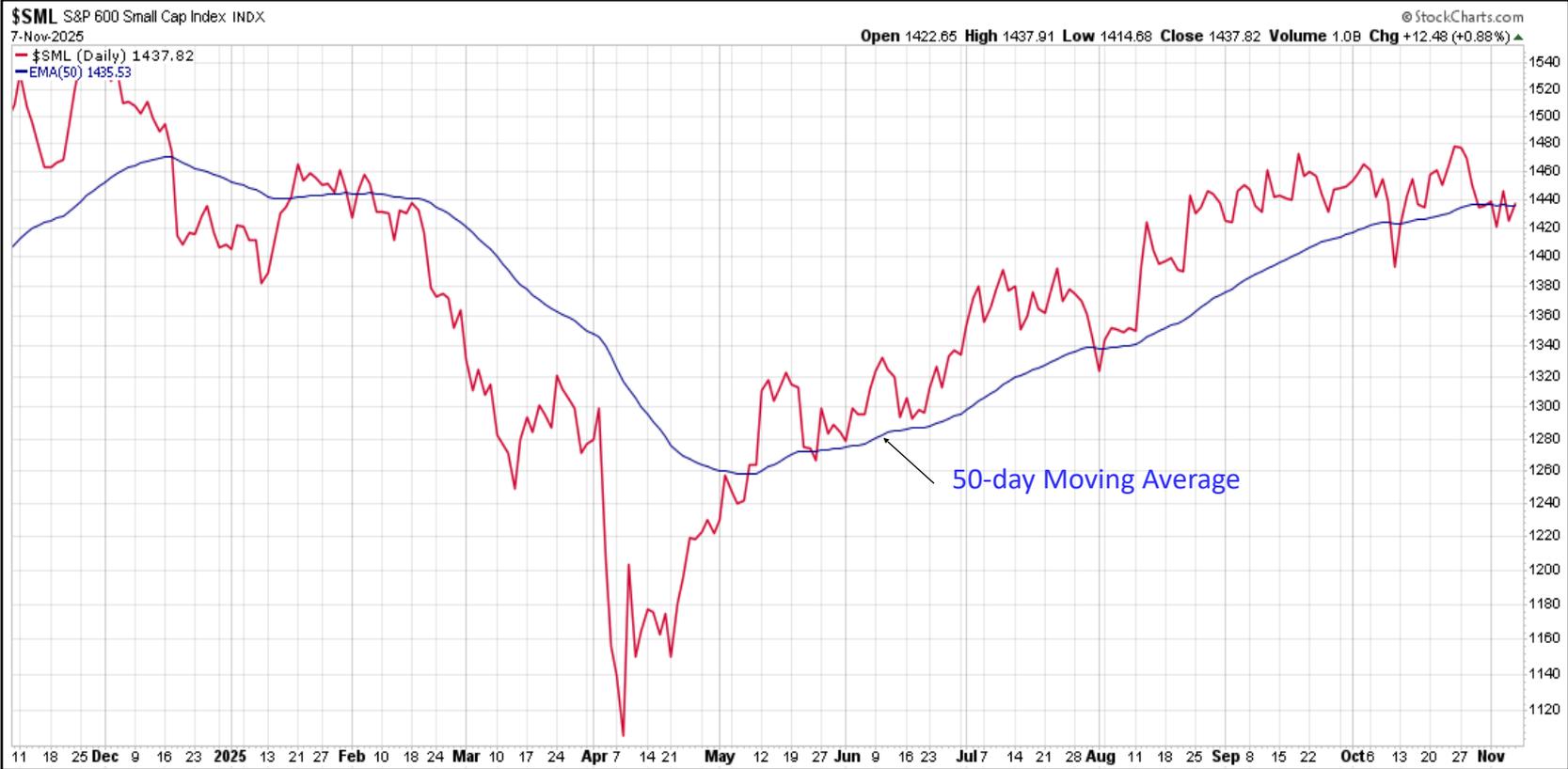
## One-Year Chart



Source: StockCharts.com

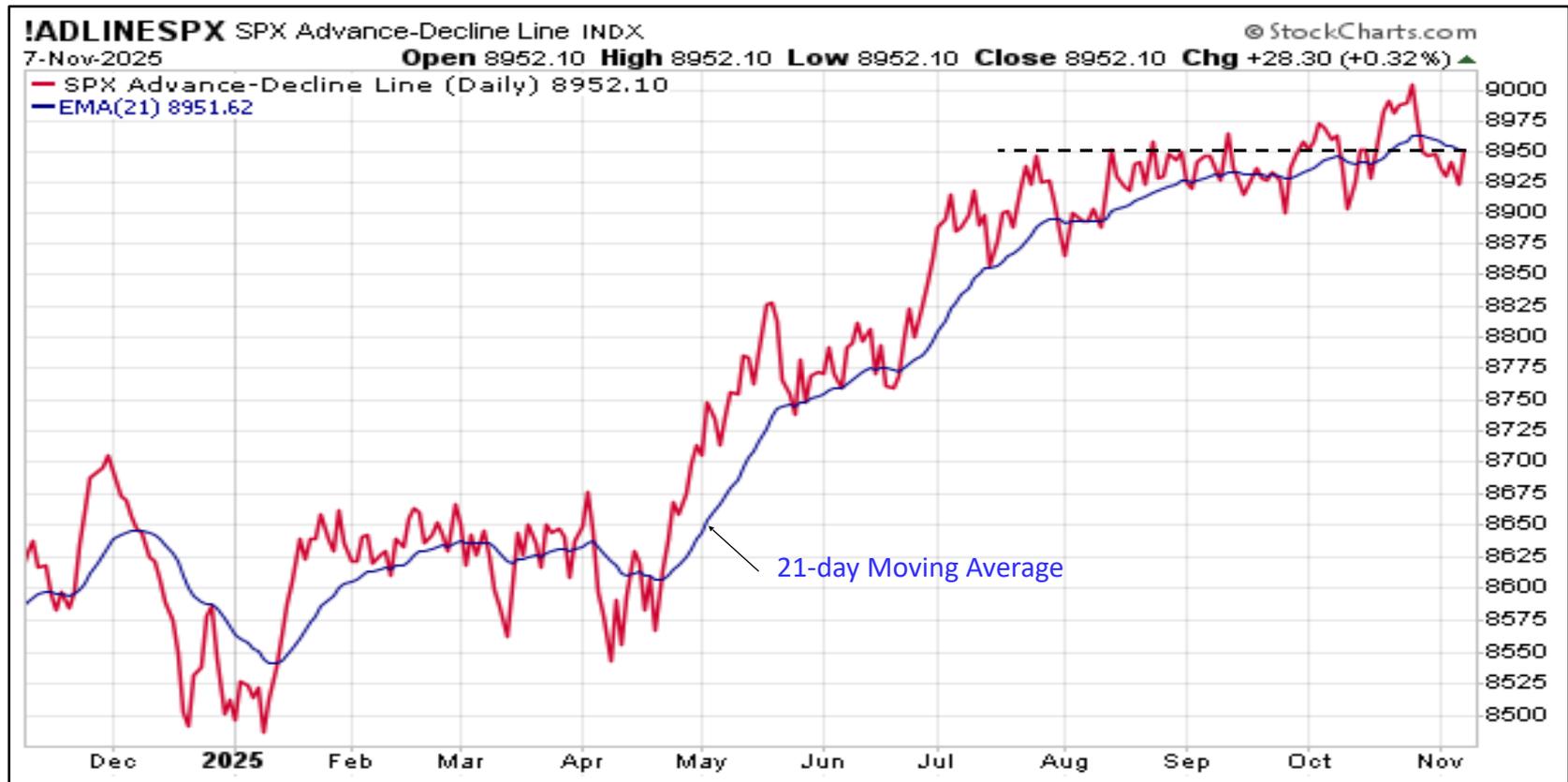
# S&P 600 Index

## One-Year Chart



Source: StockCharts.com

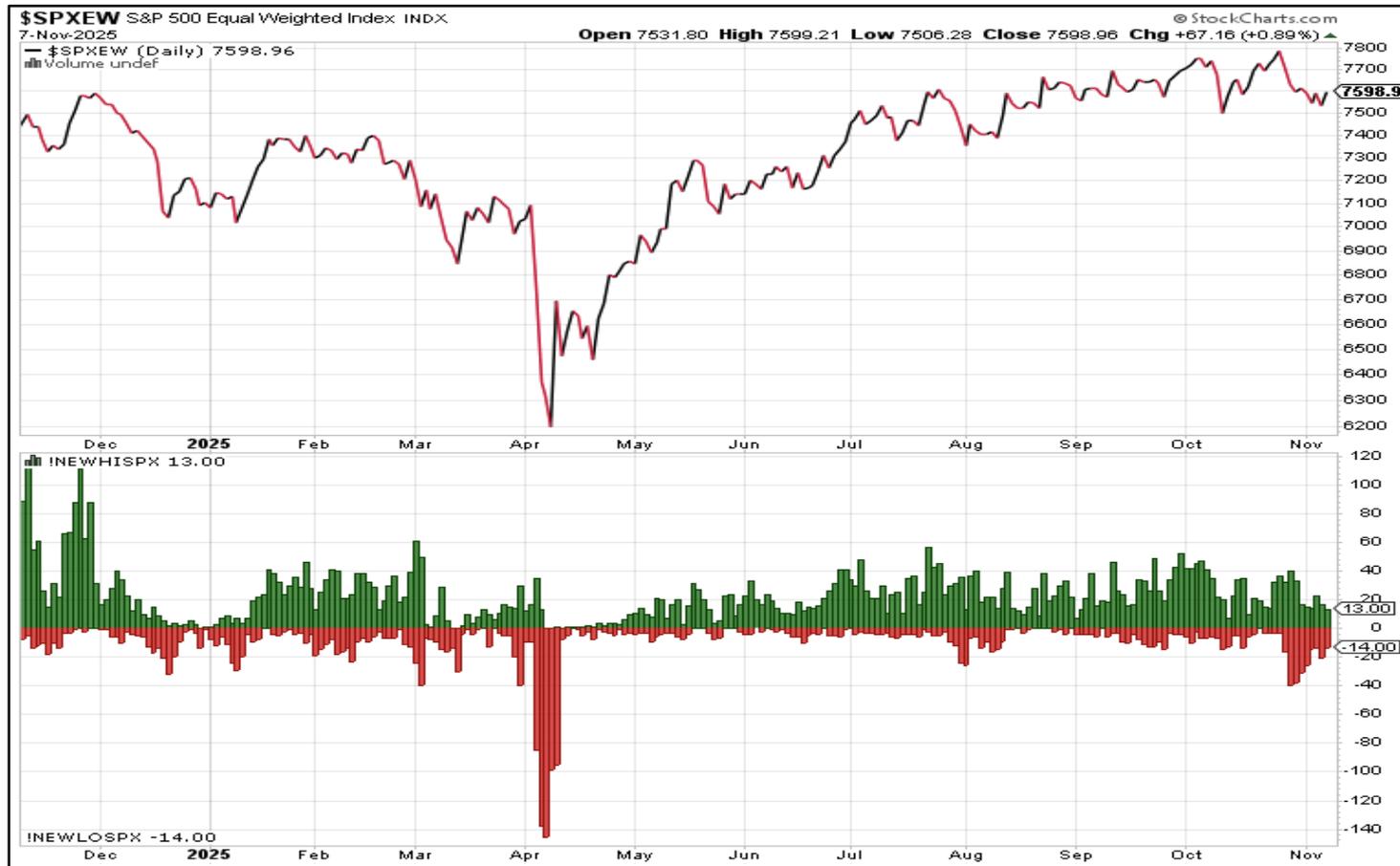
# S&P 500 Index Advance-Decline Line One-Year Chart



Source: StockCharts.com

# S&P 500 Index New Highs – New Lows

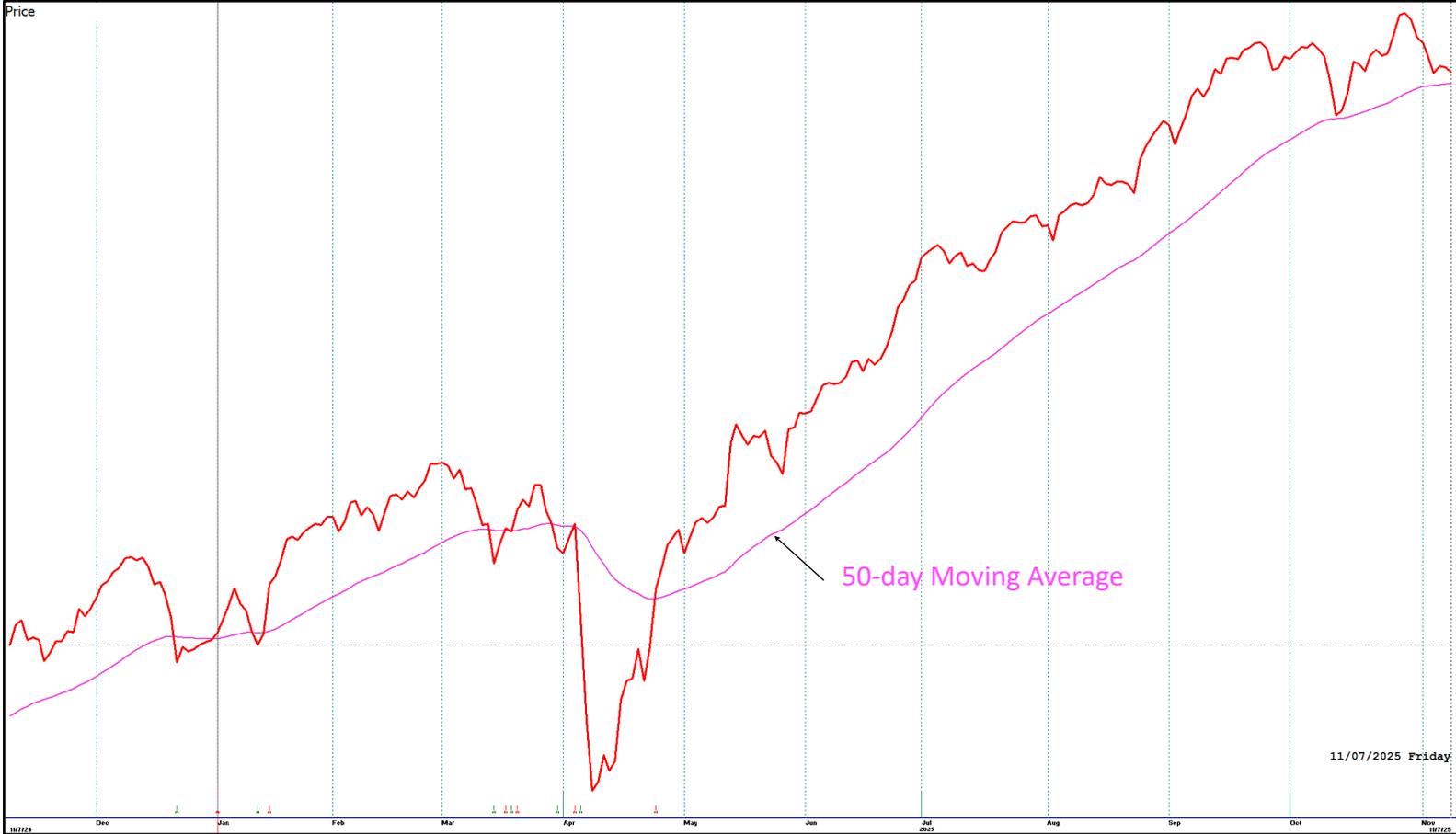
## One-Year Chart



Source: StockCharts.com

# BAML High-Yield Master II Index

## One-Year Chart



Source: [www.fasttrack.net](http://www.fasttrack.net)

# RGB Stock Market Scorecard

November 7, 2025

## Stock Market Scorecard

November 07, 2025

### Primary Cycle Analysis

Secular Market	Bull Market
Cyclical Market	Bull Market

### Technical Environment

#### Trend Analysis

Short-Term Trend Rating	Negative
Intermediate-Term Trend Rating	Positive
Long-Term Trend Rating	Positive

#### Momentum Analysis

Short-Term Momentum Rating	Negative
Intermediate-Term Momentum Rating	Negative
Long-Term Momentum Rating	Positive

#### Market Breadth Analysis

Short-Term Market Breadth Rating	Negative
Intermediate-Term Market Breadth Rating	Positive
Long-Term Market Breadth Rating	Positive

#### Credit Conditions Analysis

Short-Term Credit Conditions Rating	Positive
Intermediate-Term Credit Conditions Rating	Positive
Long-Term Credit Conditions Rating	Positive

### Early Warning Indicators

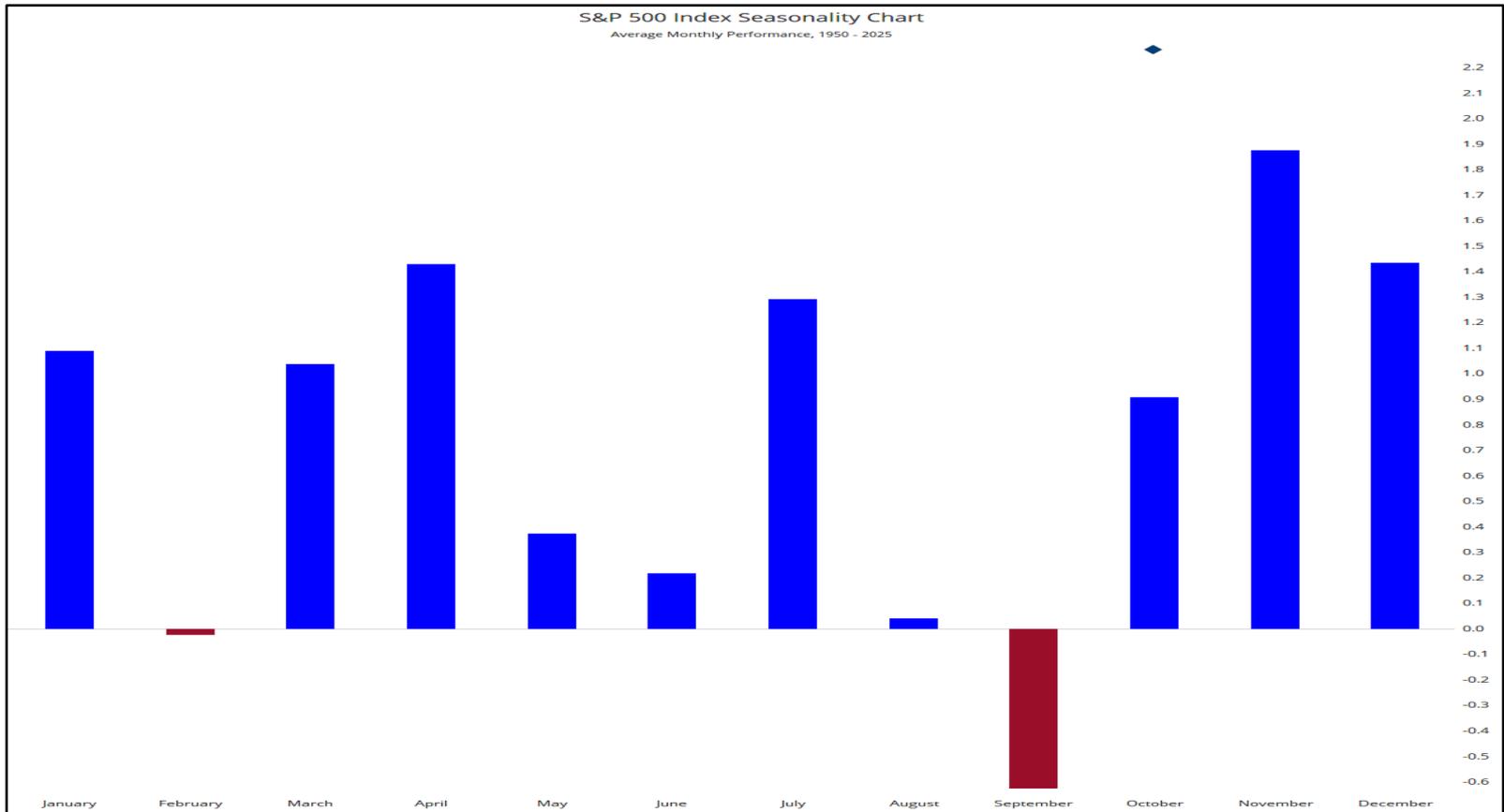
#### Overbought/Oversold Analysis

Short-Term Overbought/Oversold Rating	Positive
Intermediate-Term Overbought/Oversold Rating	Neutral
Long-Term Overbought/Oversold Rating	Neutral

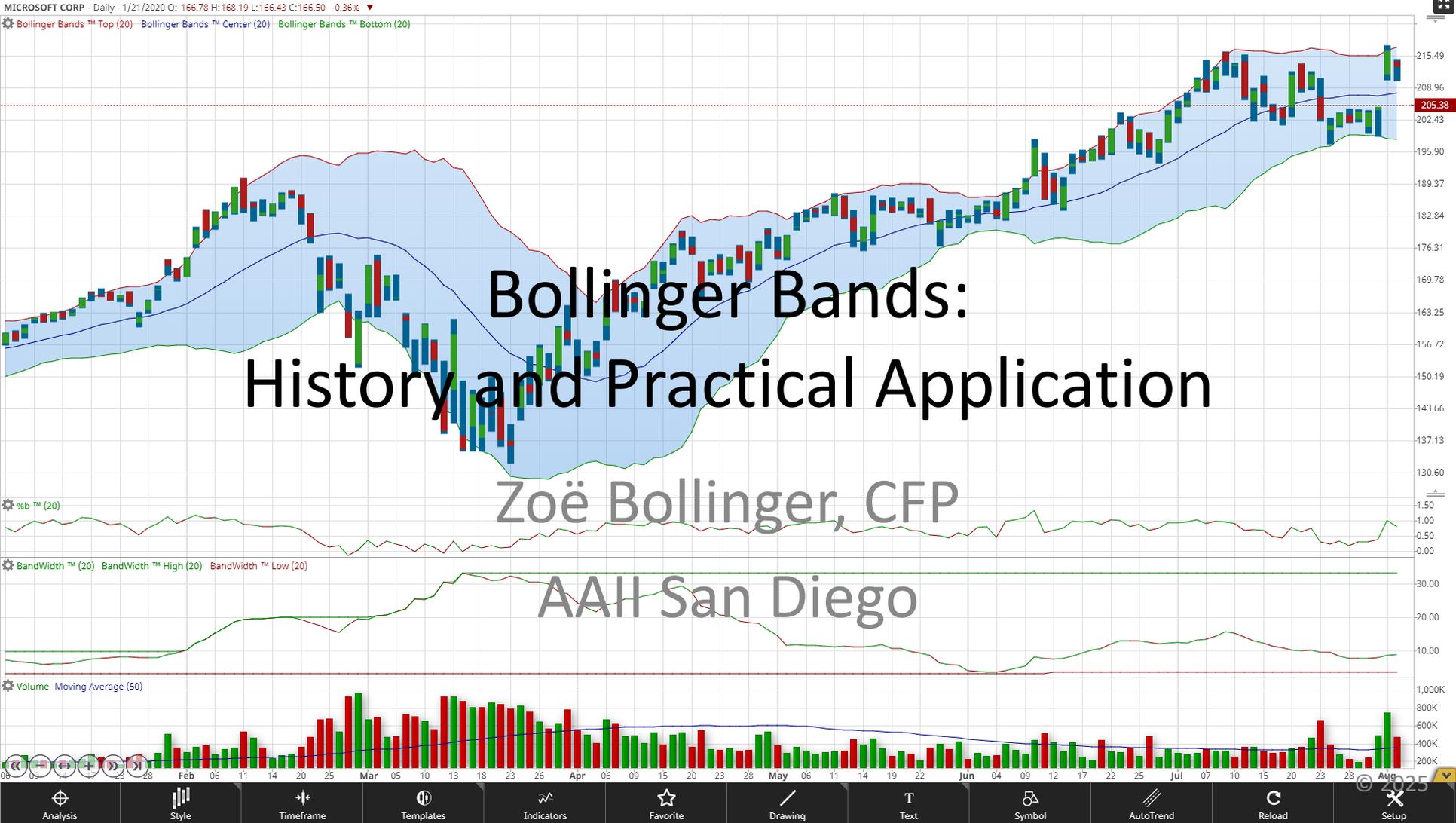
#### Investor Sentiment

Professional Investors	Neutral
Individual Investors	Neutral

# Seasonality - Average Monthly Performance S&P 500 Index 1950-2025



Source: Optuma



# Bollinger Bands: History and Practical Application

Zoë Bollinger, CFP

AAll San Diego

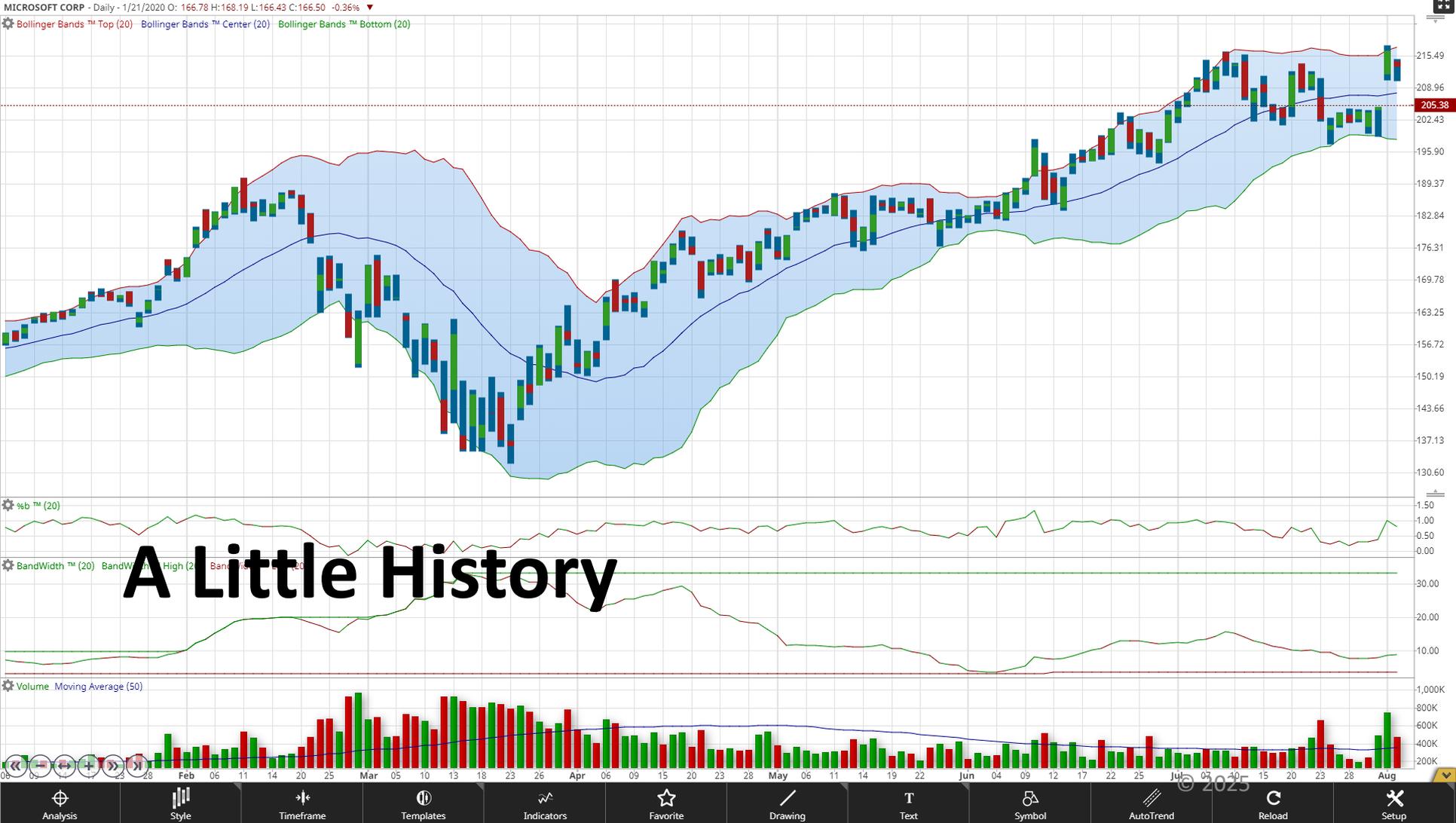
# Why use TA tools like trading bands?

- Eliminate emotions from the trading process
- Develop systematic approaches

%b™ (20)

BandWidth™ (20) BandWidth™ High (20) BandWidth™ Low (20)

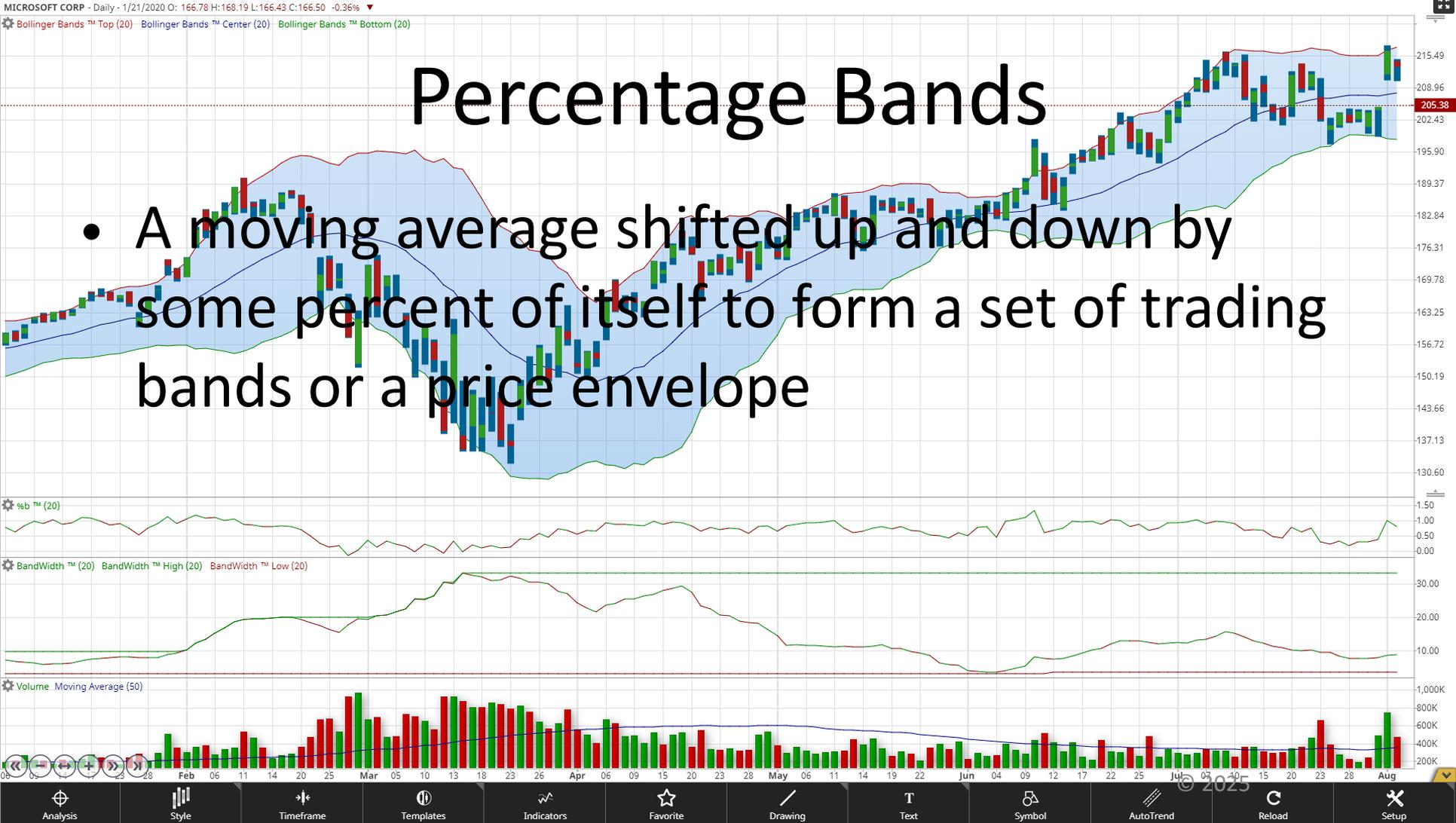
Volume Moving Average (50)





# Getting Started

- John learned about trading bands in the 1978 to 1982 era
- The core idea was to use bands to define high and low on a relative basis and then...
- Couple those definitions with the action of relevant indicators to arrive at rigorous decisions



# Percentage Bands

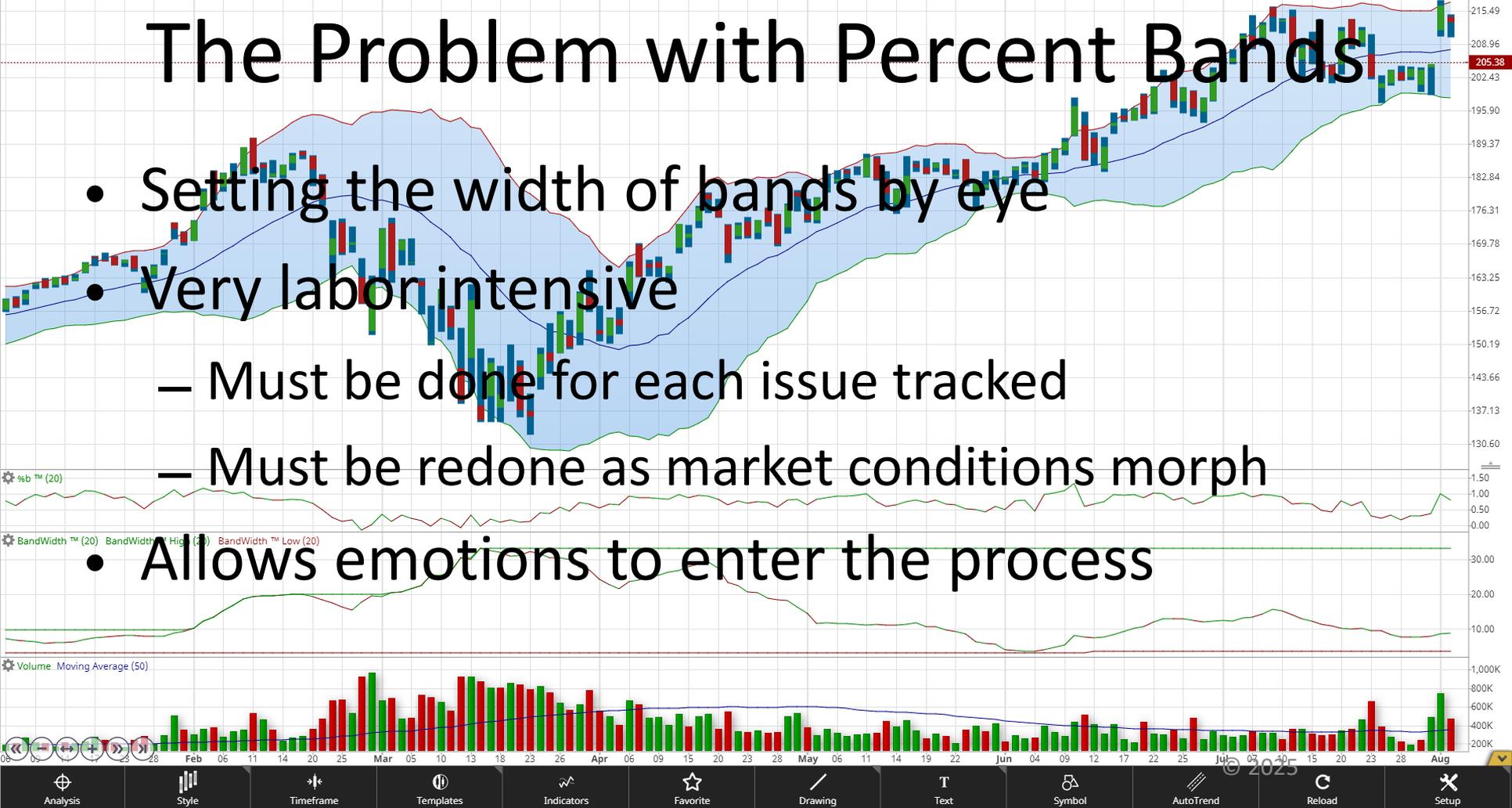
- A moving average shifted up and down by some percent of itself to form a set of trading bands or a price envelope

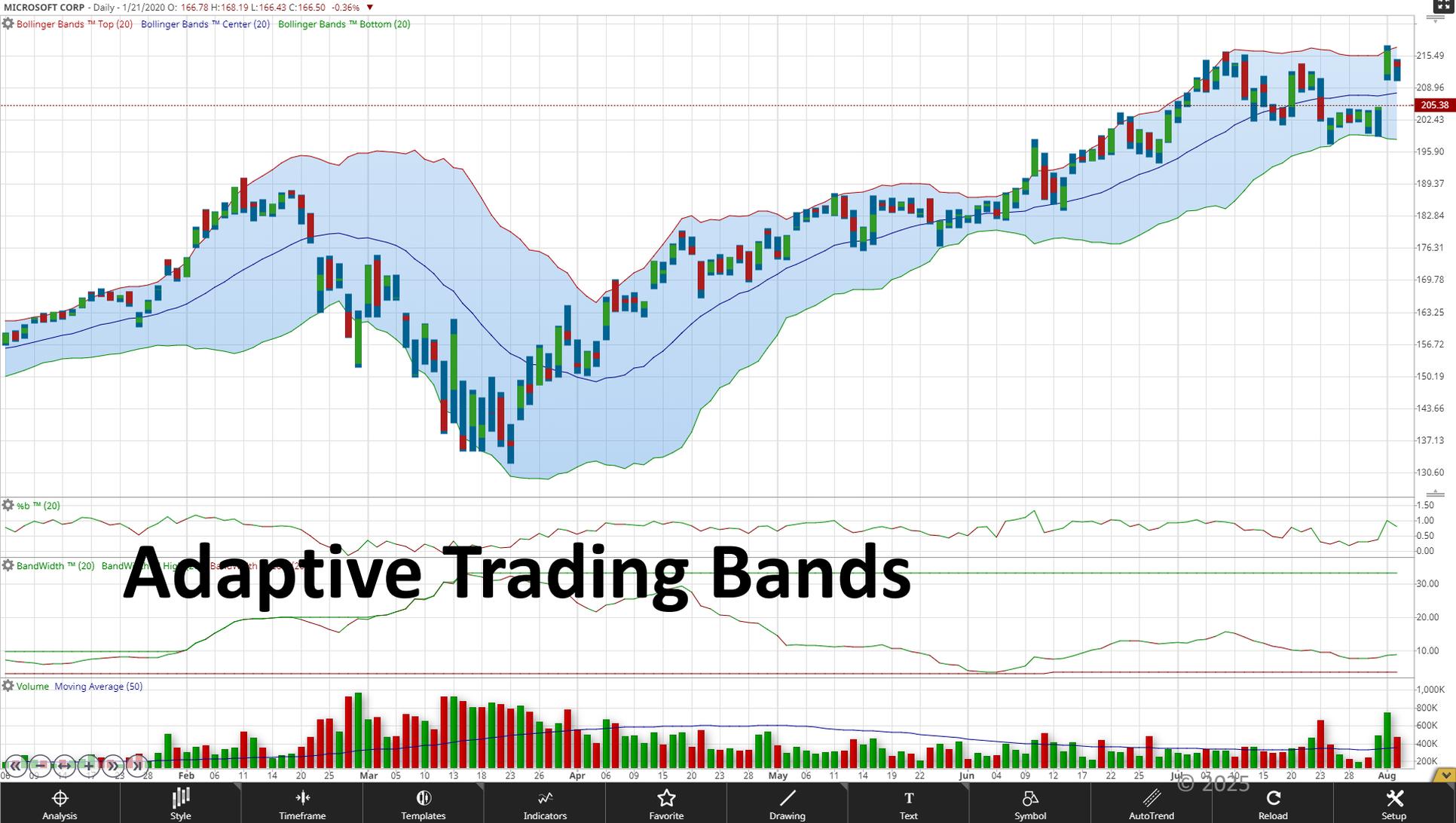
Technical analysis interface showing various indicators and volume data.

- Indicators: %b™ (20), BandWidth™ (20), BandWidth™ High (20), BandWidth™ Low (20), Volume, Moving Average (50)
- Navigation: Analysis, Style, Timeframe, Templates, Indicators, Favorite, Drawing, Text, Symbol, AutoTrend, Reload, Setup
- Time: 2025, Aug

# The Problem with Percent Bands

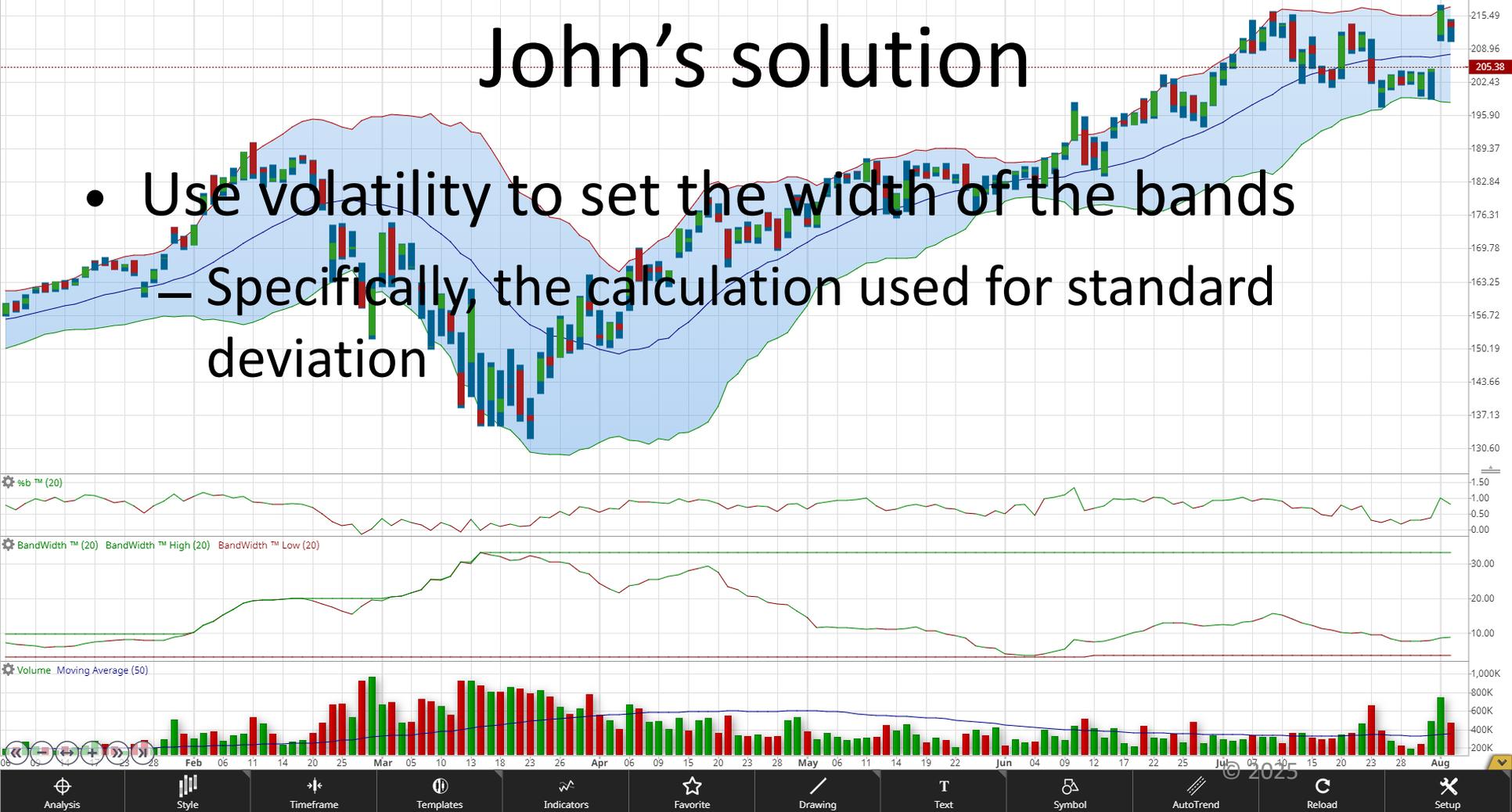
- Setting the width of bands by eye
- Very labor intensive
  - Must be done for each issue tracked
  - Must be redone as market conditions morph
- Allows emotions to enter the process





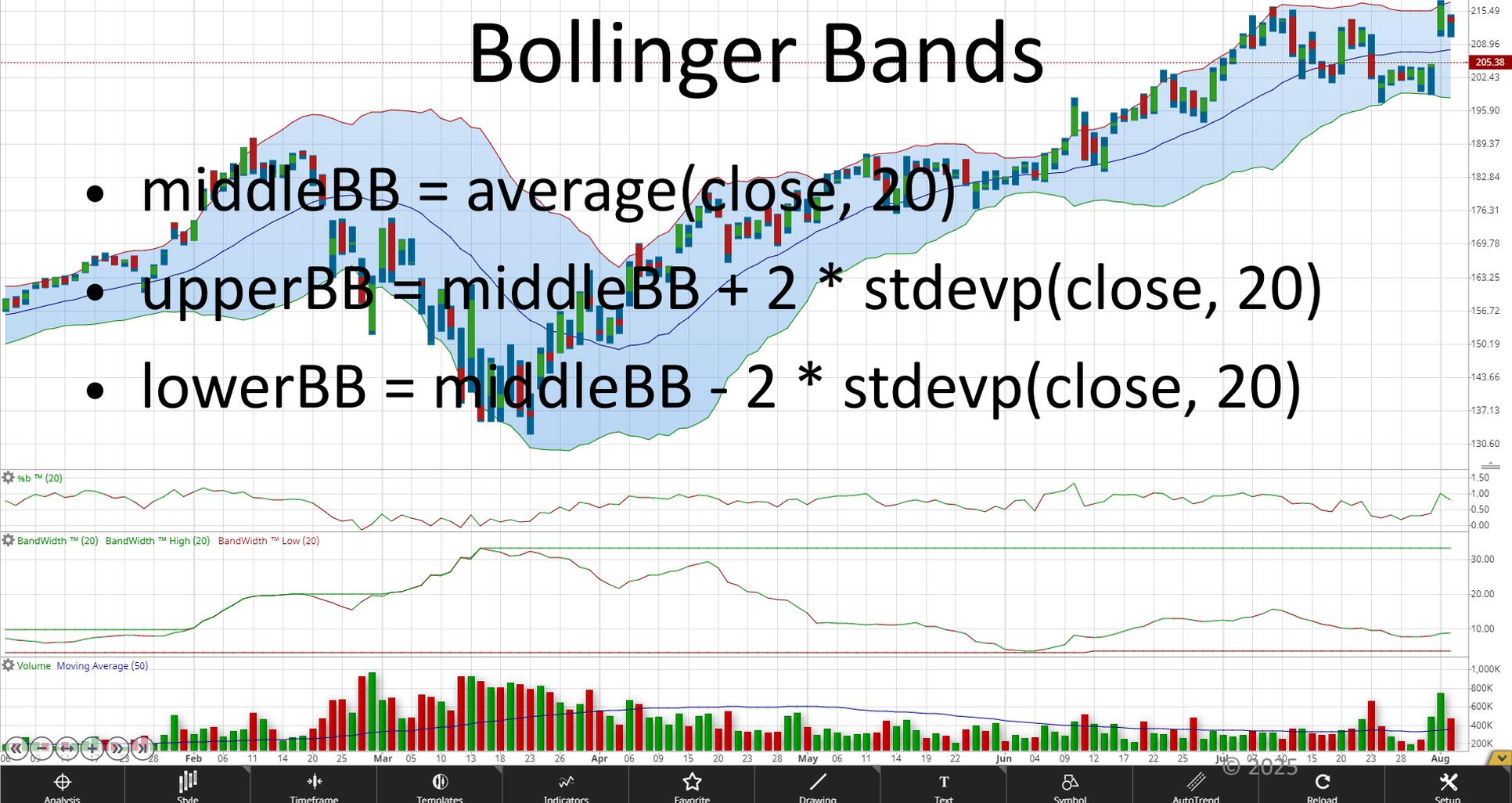
# John's solution

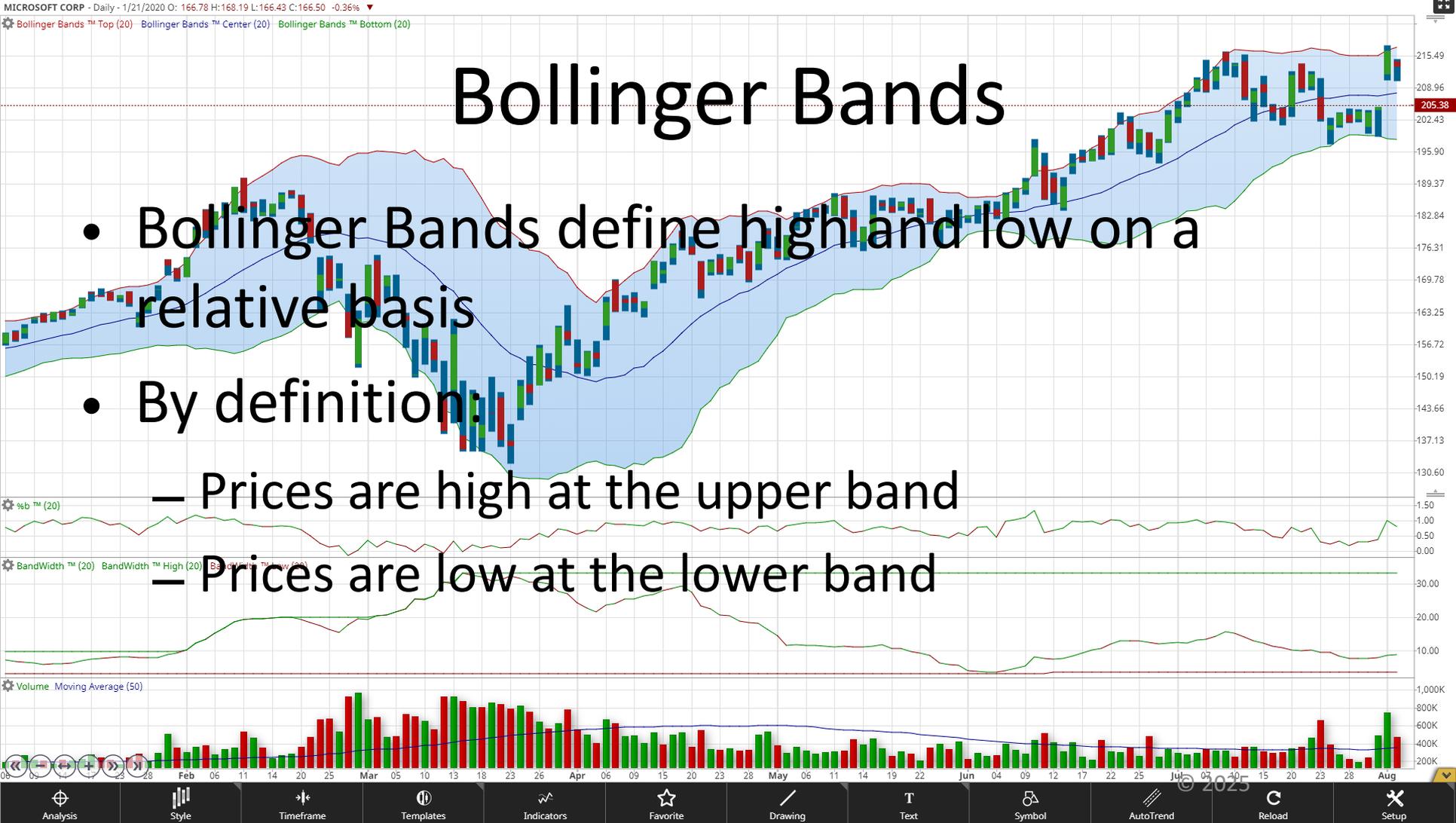
- Use volatility to set the width of the bands
  - Specifically, the calculation used for standard deviation



# Bollinger Bands

- $middleBB = average(close, 20)$
- $upperBB = middleBB + 2 * stdevp(close, 20)$
- $lowerBB = middleBB - 2 * stdevp(close, 20)$





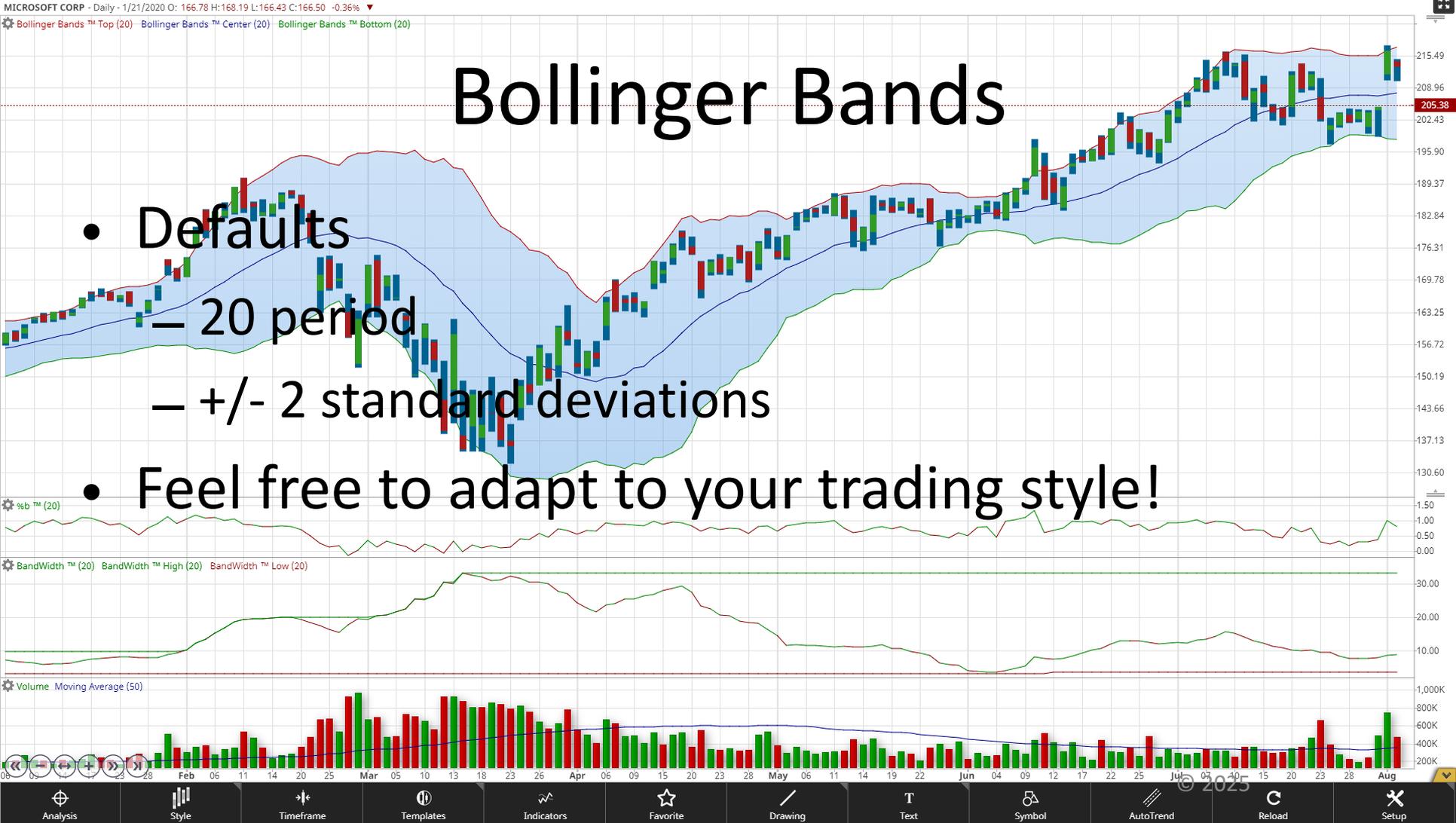
# Bollinger Bands

- Bollinger Bands define high and low on a relative basis
- By definition:
  - Prices are high at the upper band
  - Prices are low at the lower band

# NVDA - Daily

☑ Bollinger Bands™





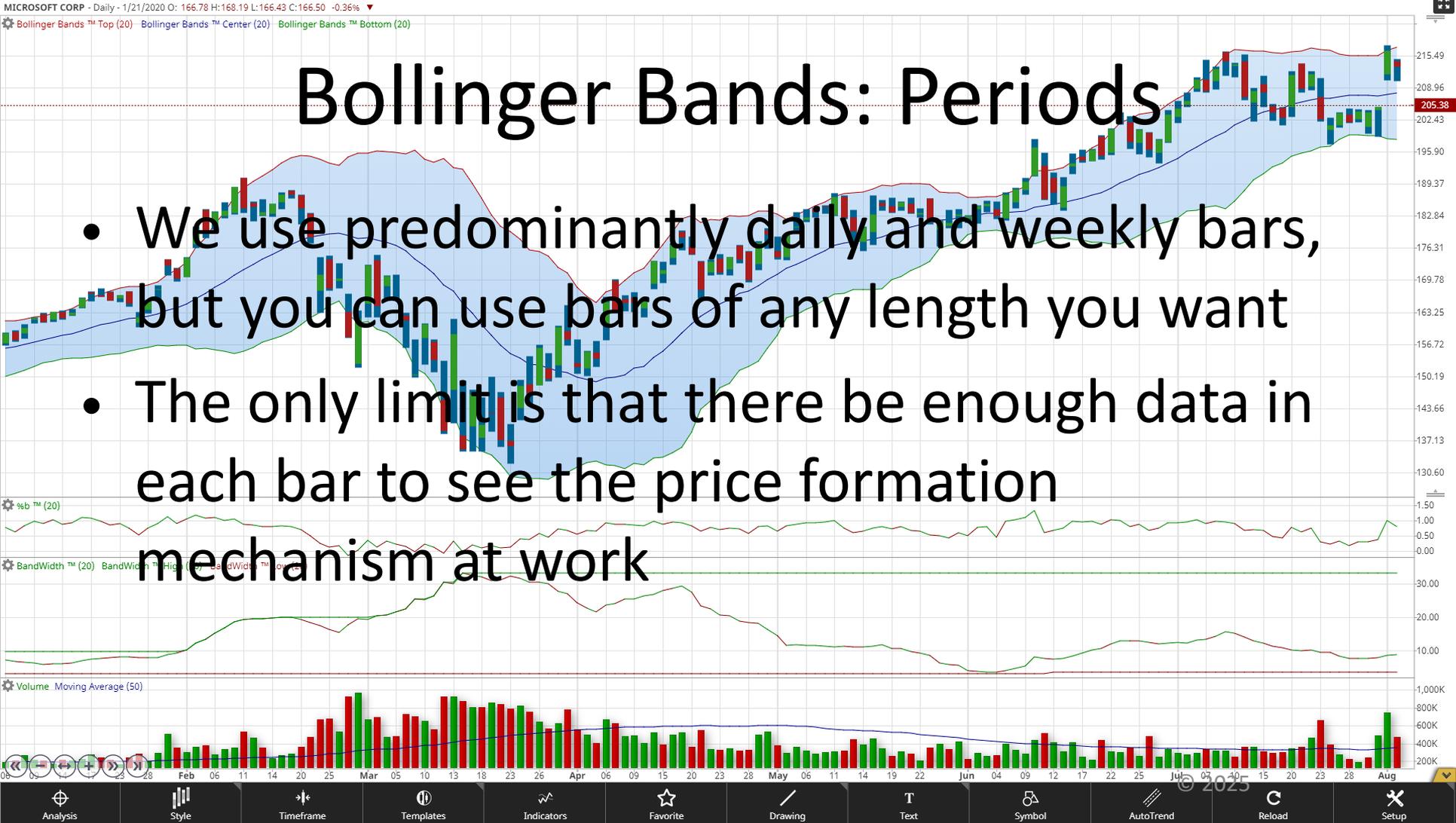
# Bollinger Bands

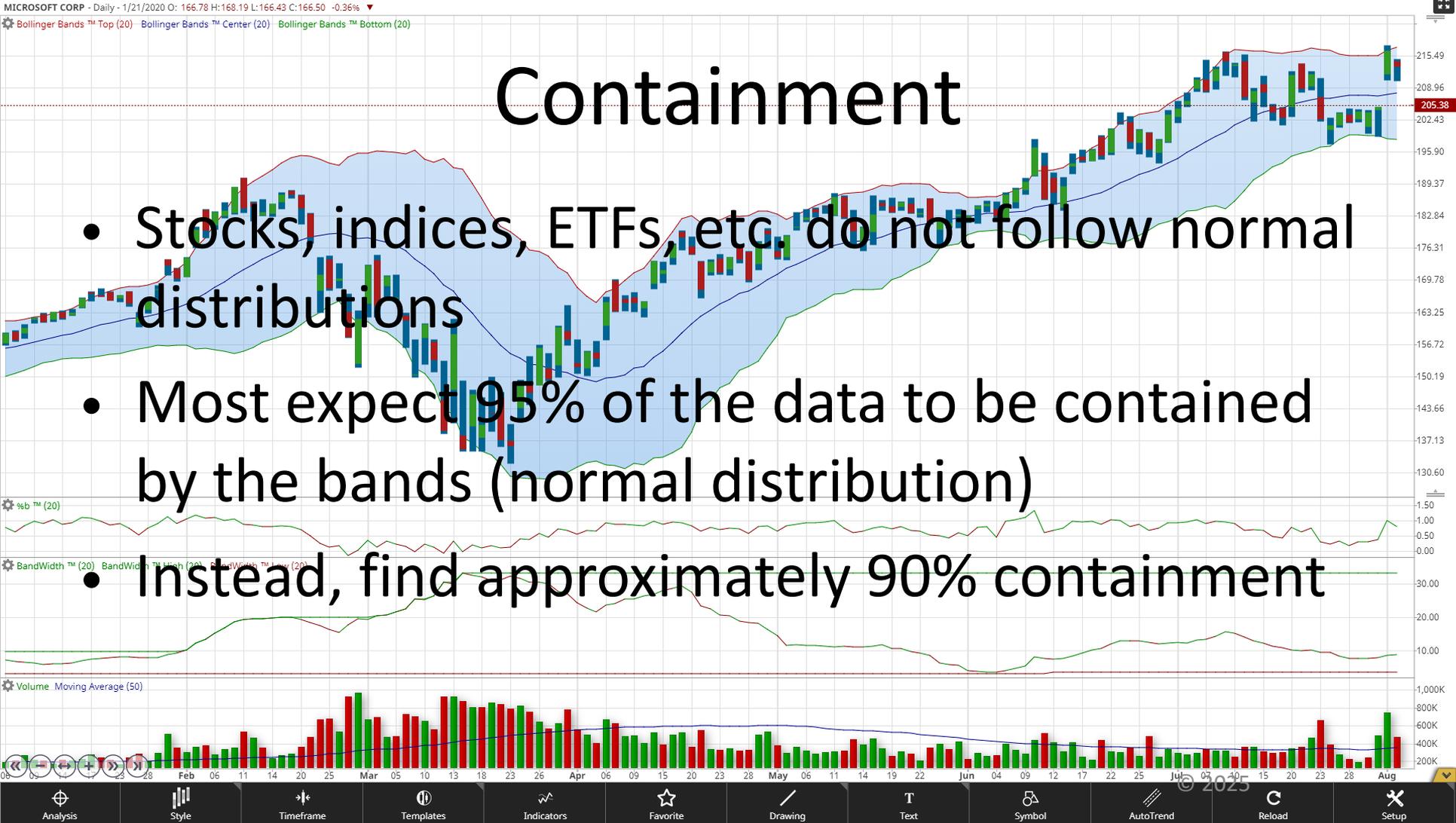
- Defaults

  - 20 period

  - +/- 2 standard deviations

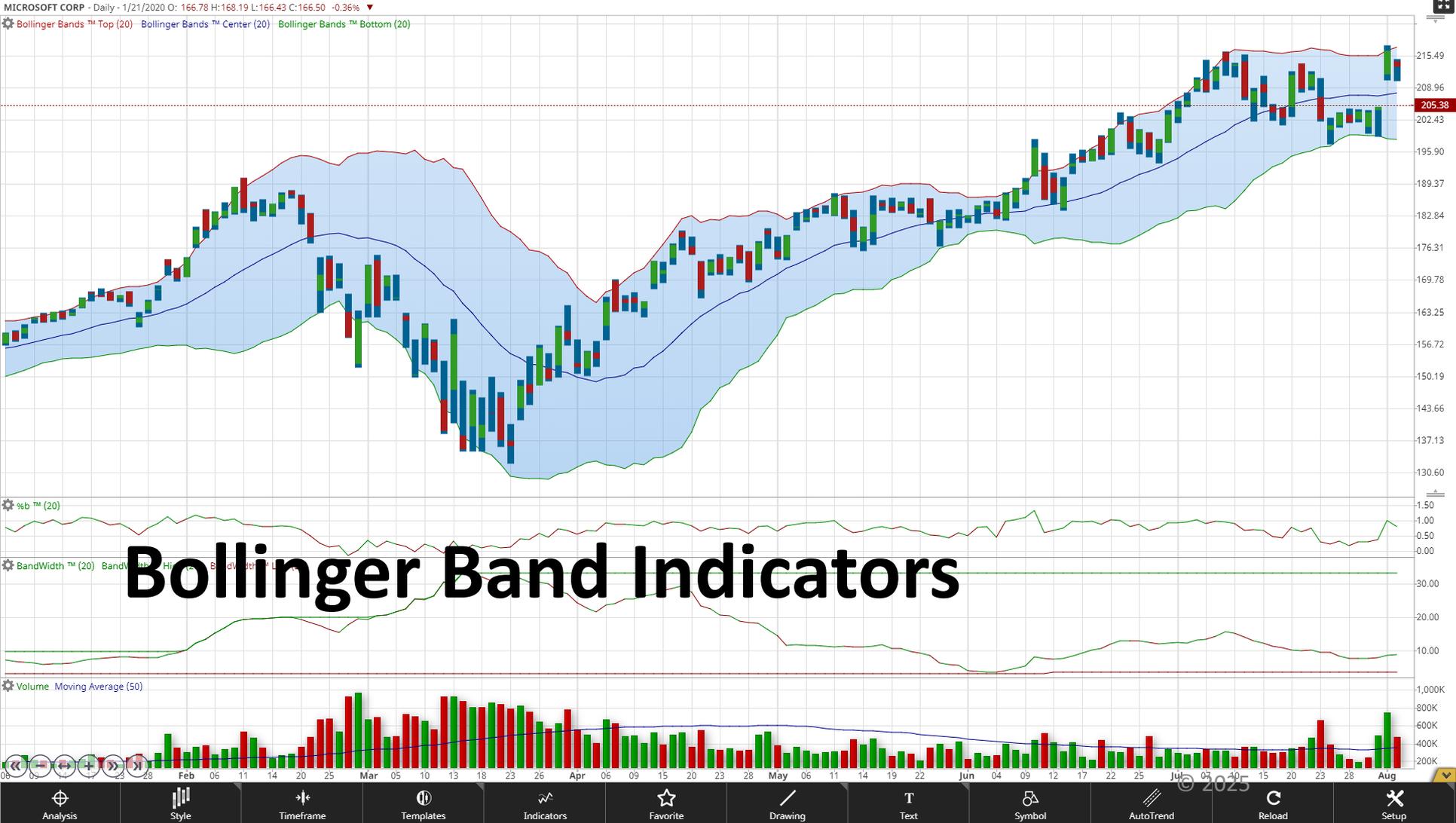
- Feel free to adapt to your trading style!

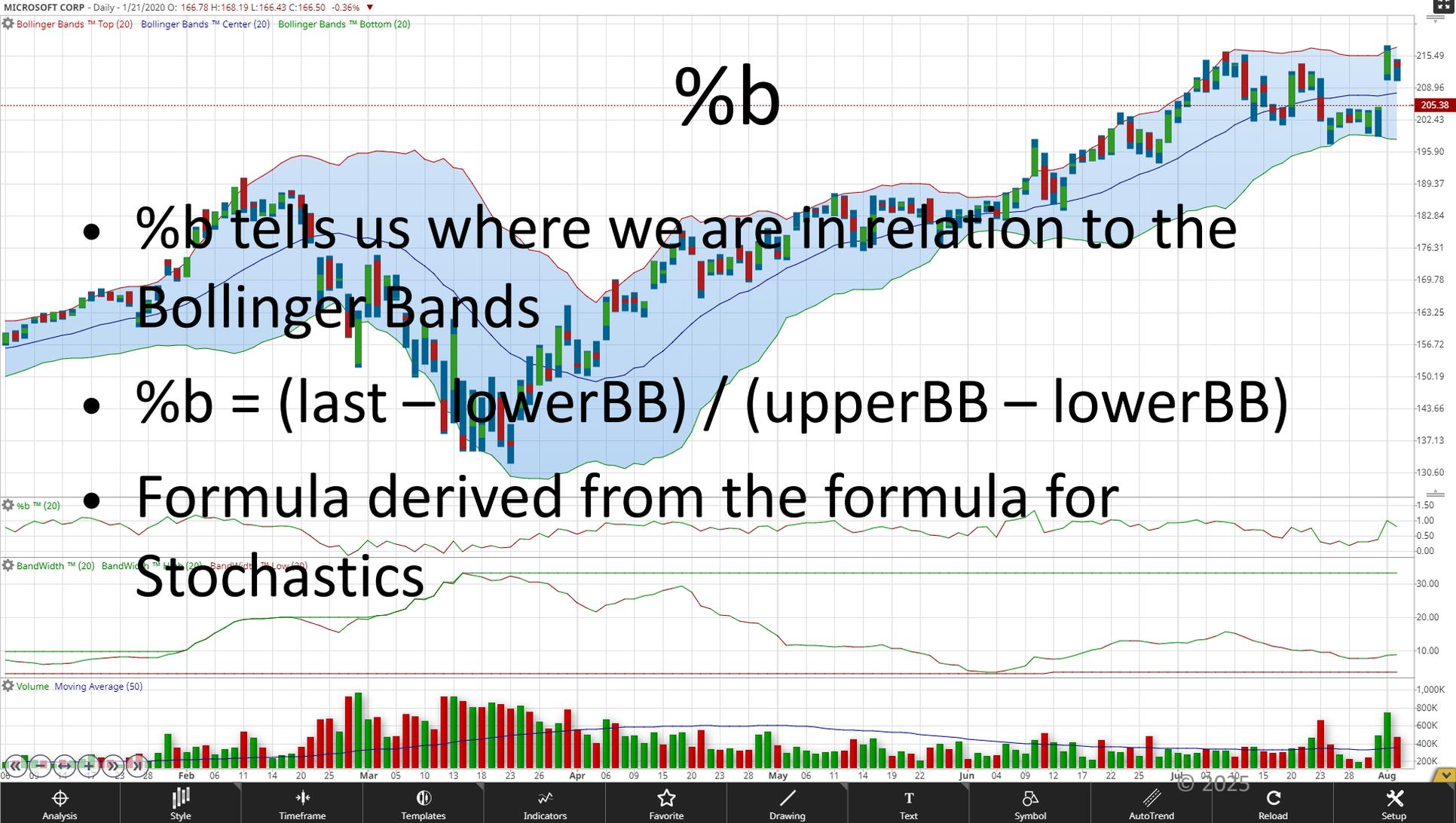




# Containment

- Stocks, indices, ETFs, etc do not follow normal distributions
- Most expect 95% of the data to be contained by the bands (normal distribution)
- Instead, find approximately 90% containment





# %b

- %b tells us where we are in relation to the Bollinger Bands

- $$\%b = \frac{\text{last} - \text{lowerBB}}{\text{upperBB} - \text{lowerBB}}$$

- Formula derived from the formula for

## Stochastics

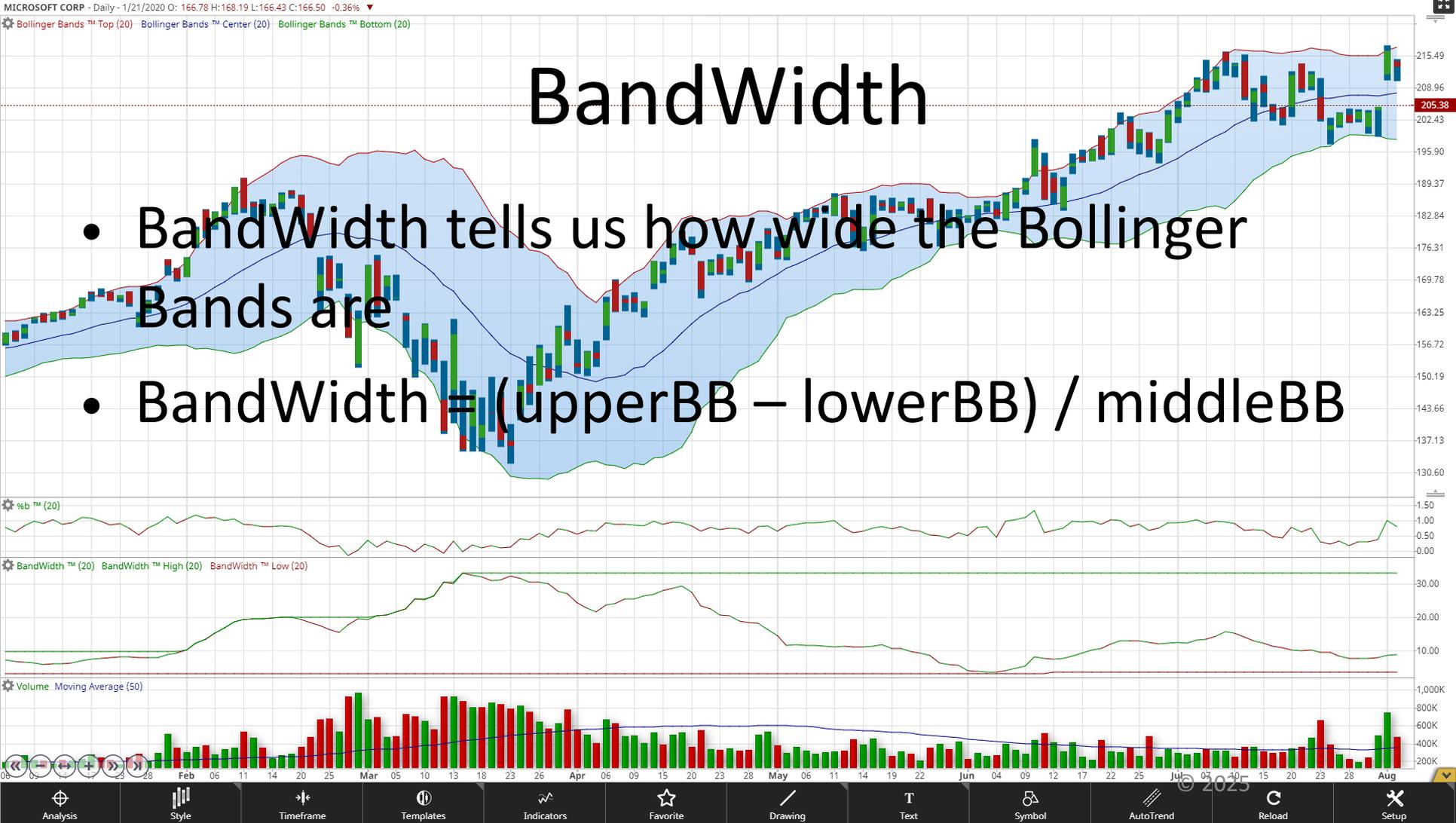
# NVDA

NVIDIA CORPORATION - Daily - 4/16/2025 O: 104.44 H:106.79 L:100.45 C:104.49 -6.87% ▼

Bollinger Bands™



%b™



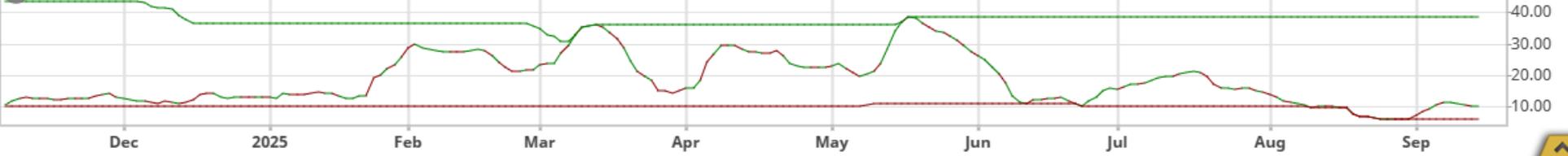
# NVDA

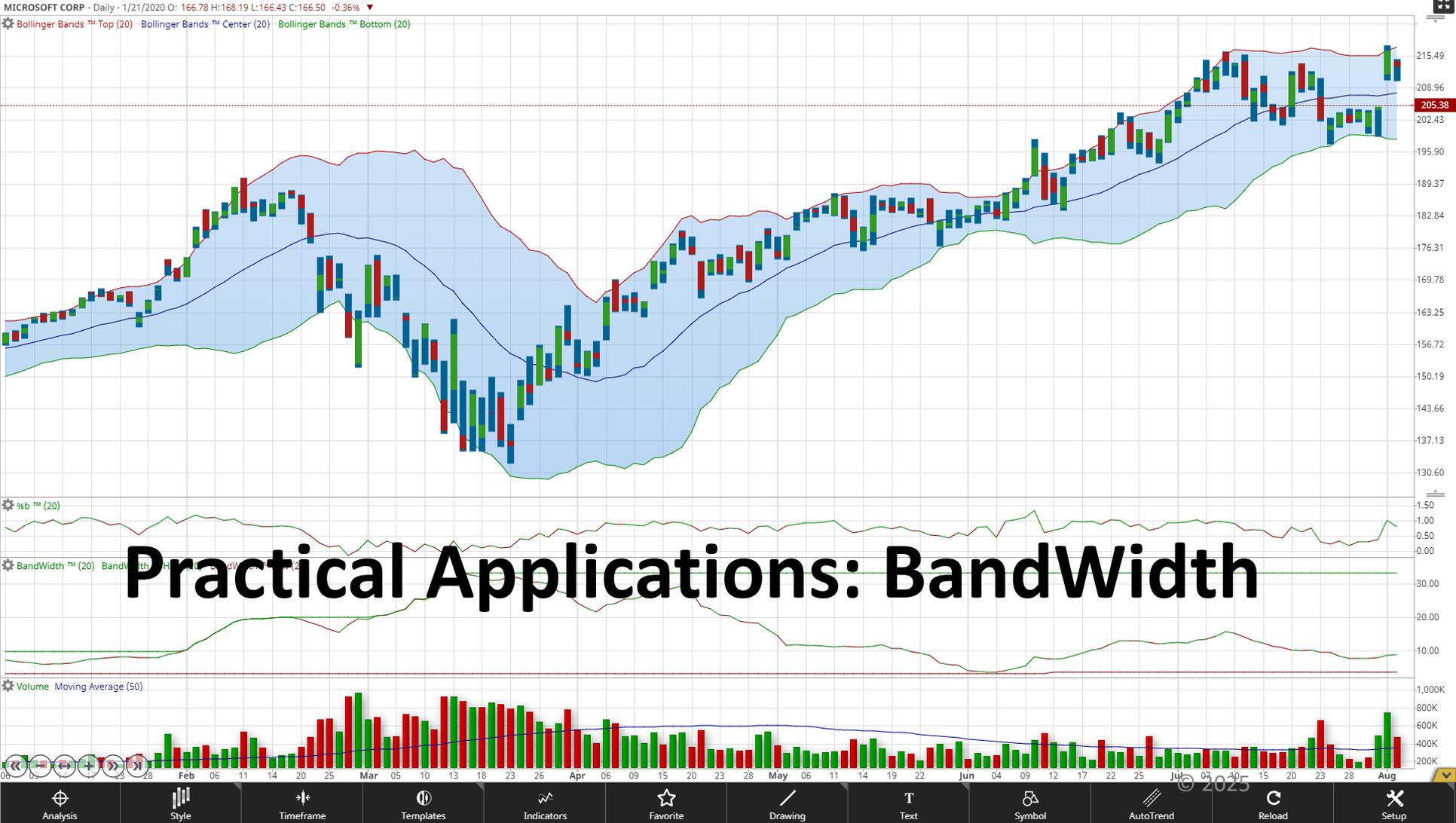
NVIDIA CORPORATION - Daily - 4/16/2025 O: 104.44 H:106.79 L:100.45 C:104.49 -6.87% ▼

☰ ☒ X Bollinger Bands™

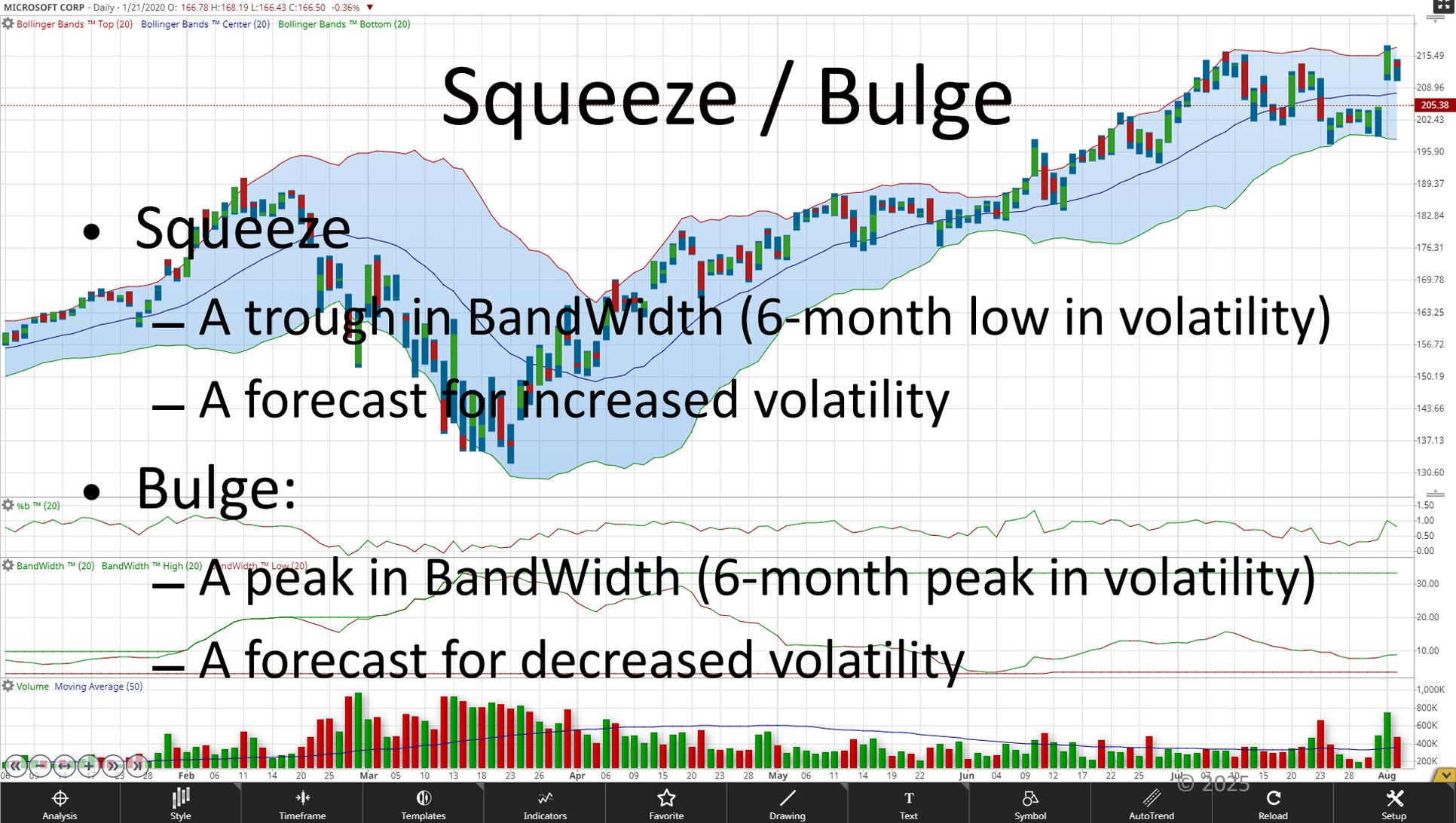


☰ ☒ X BandWidth™





# Practical Applications: BandWidth



# Squeeze / Bulge

- Squeeze

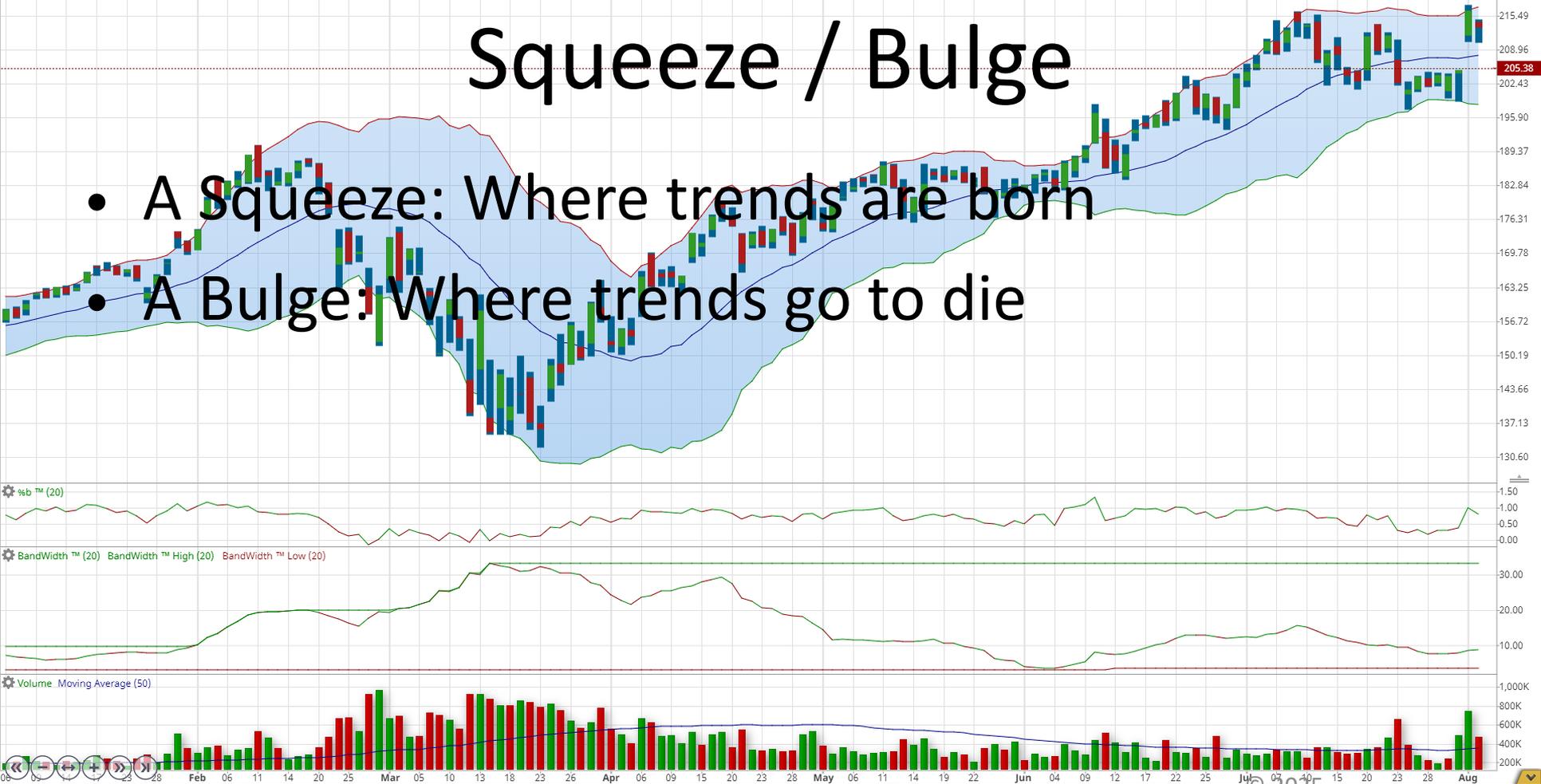
- A trough in BandWidth (6-month low in volatility)
- A forecast for increased volatility

- Bulge:

- A peak in BandWidth (6-month peak in volatility)
- A forecast for decreased volatility

# Squeeze / Bulge

- A Squeeze: Where trends are born
- A Bulge: Where trends go to die



# PLTR Daily



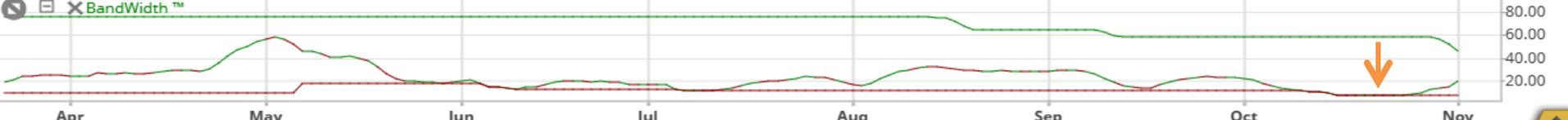
PALANTIR TECHNOLOGIES INC - Daily - 11/3/2025 O: 205.21 H:222.00 L:201.82 C:213.39 +6.44% ▲

Bollinger Bands™

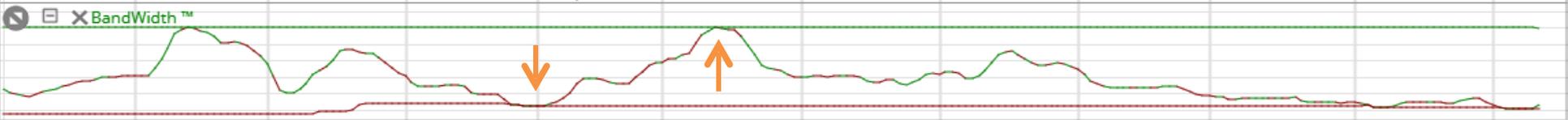


%b™

BandWidth™



# TSLA Daily



# CLS Daily

Bollinger Bands™

%b™

BandWidth™

Apr May Jun Jul Aug Sep Oct Nov

215.49  
208.96  
205.38  
202.43  
195.90

349.05  
334.30

267.44

200.58

133.72

66.86

1.50  
0.50

80.00  
60.00  
40.00  
20.00



# SAP Daily (HeadFake)



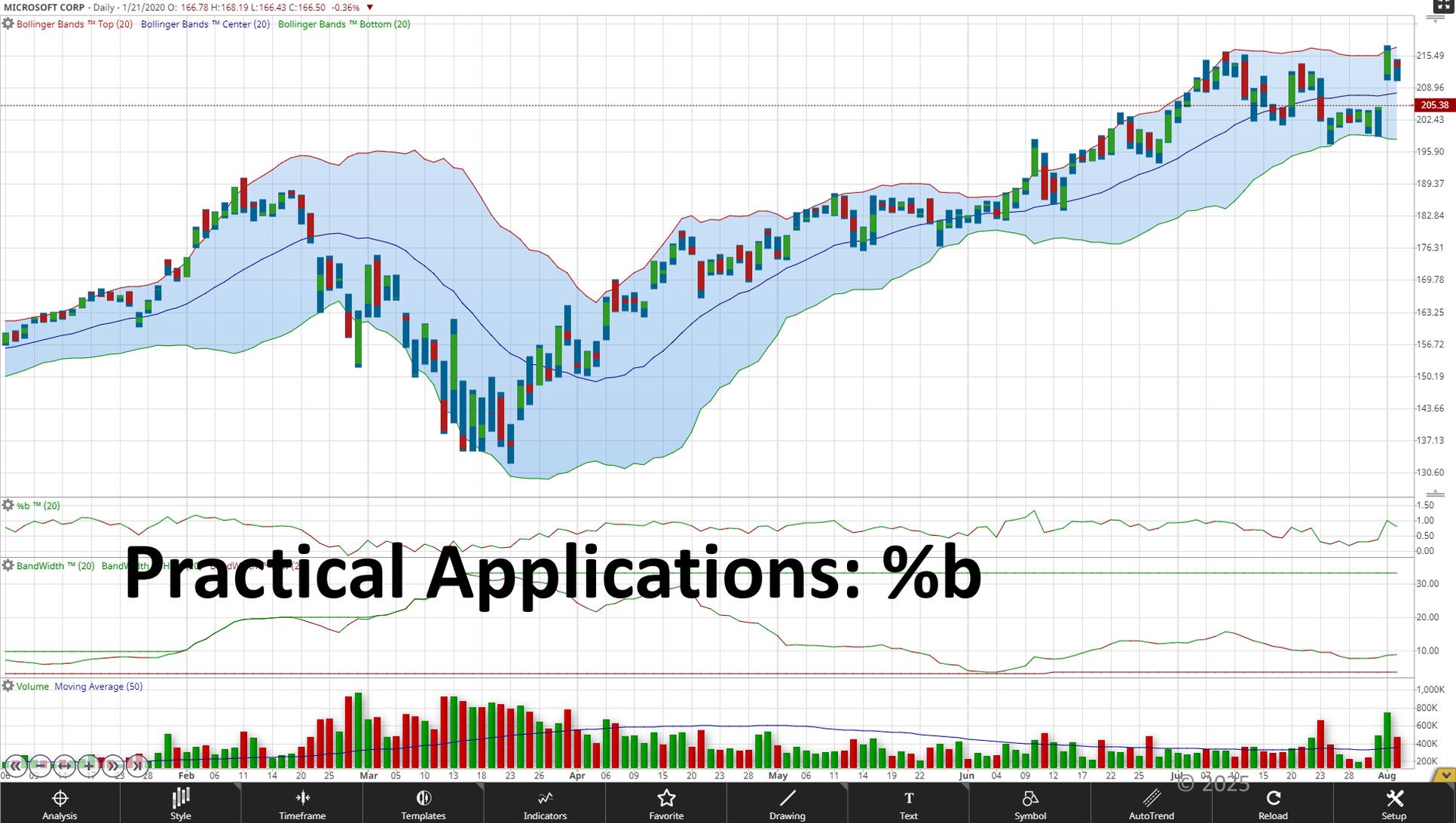
# GOOGL - Daily

Bollinger Bands™



%b™

BandWidth™



MICROSOFT CORP - Daily - 1/21/2020 O: 166.78 H:168.19 L:166.43 C:166.50 -0.36%  
Bollinger Bands™ Top (20) Bollinger Bands™ Center (20) Bollinger Bands™ Bottom (20)

%b™ (20)

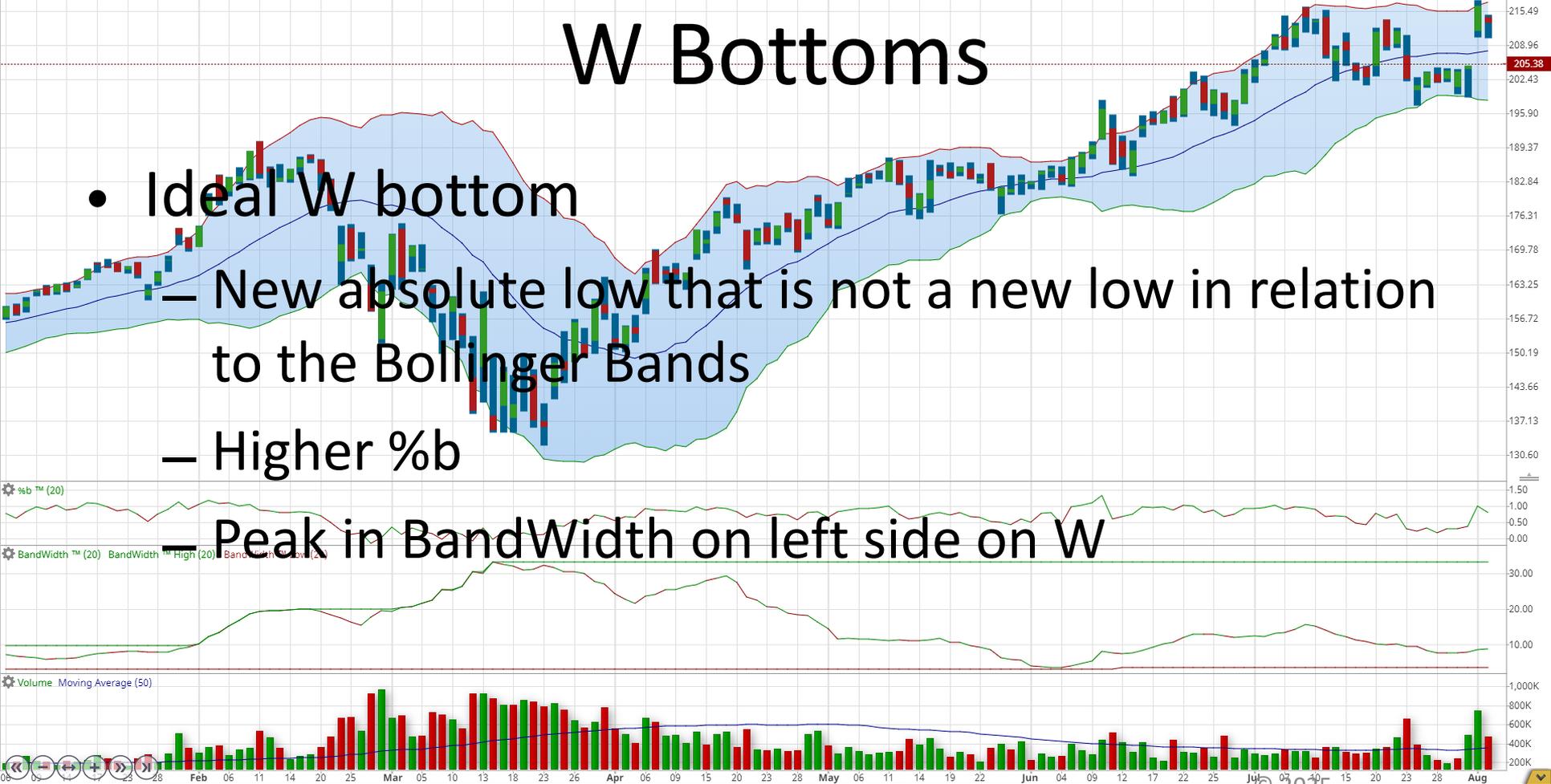
BandWidth™ (20) BandWidth™ (20) BandWidth™ (20)

# Practical Applications: %b

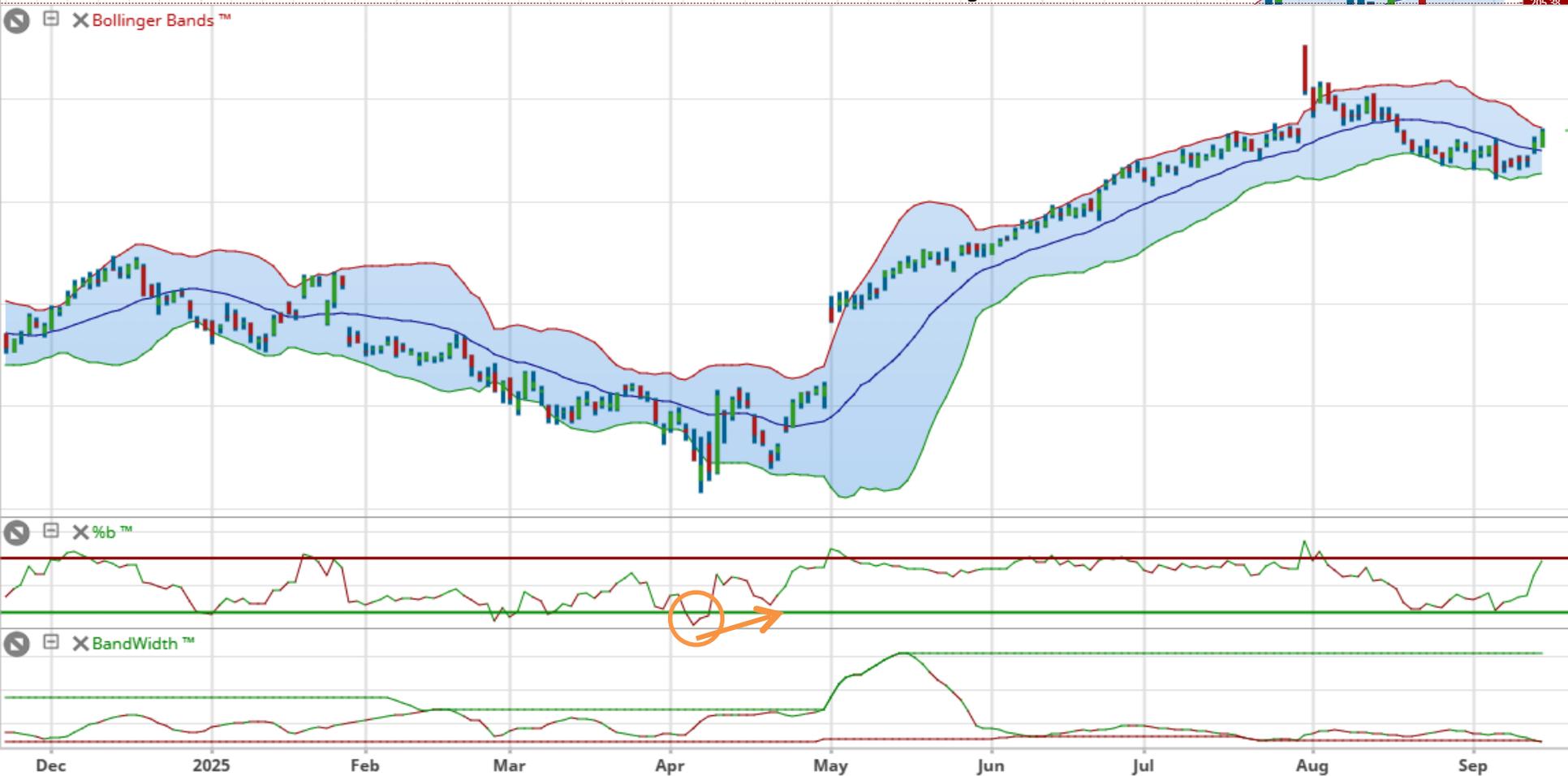
Volume Moving Average (50)

# W Bottoms

- Ideal W bottom
  - New absolute low that is not a new low in relation to the Bollinger Bands
  - Higher %b
  - Peak in BandWidth™ on left side on W



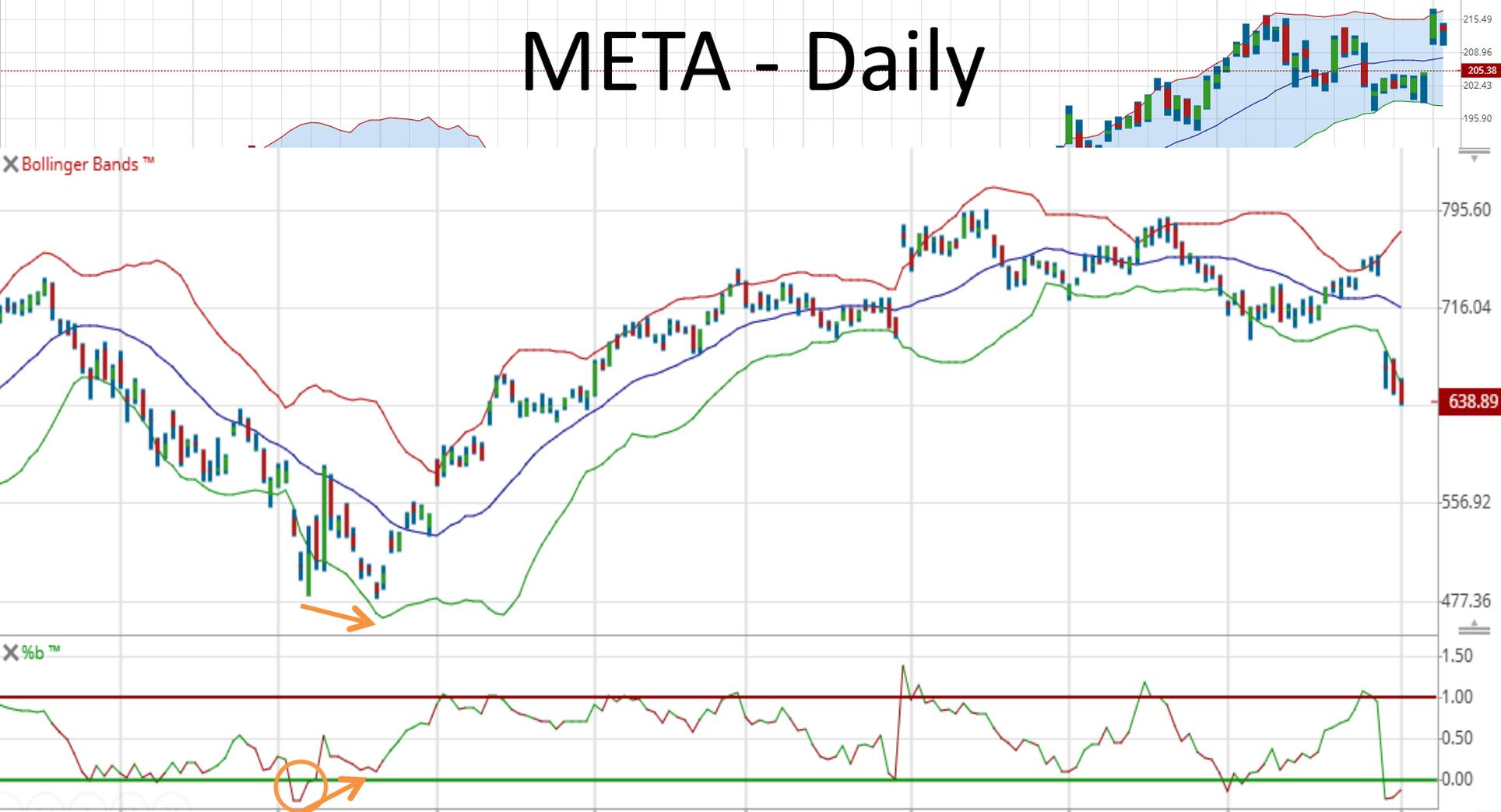
# MSFT Daily

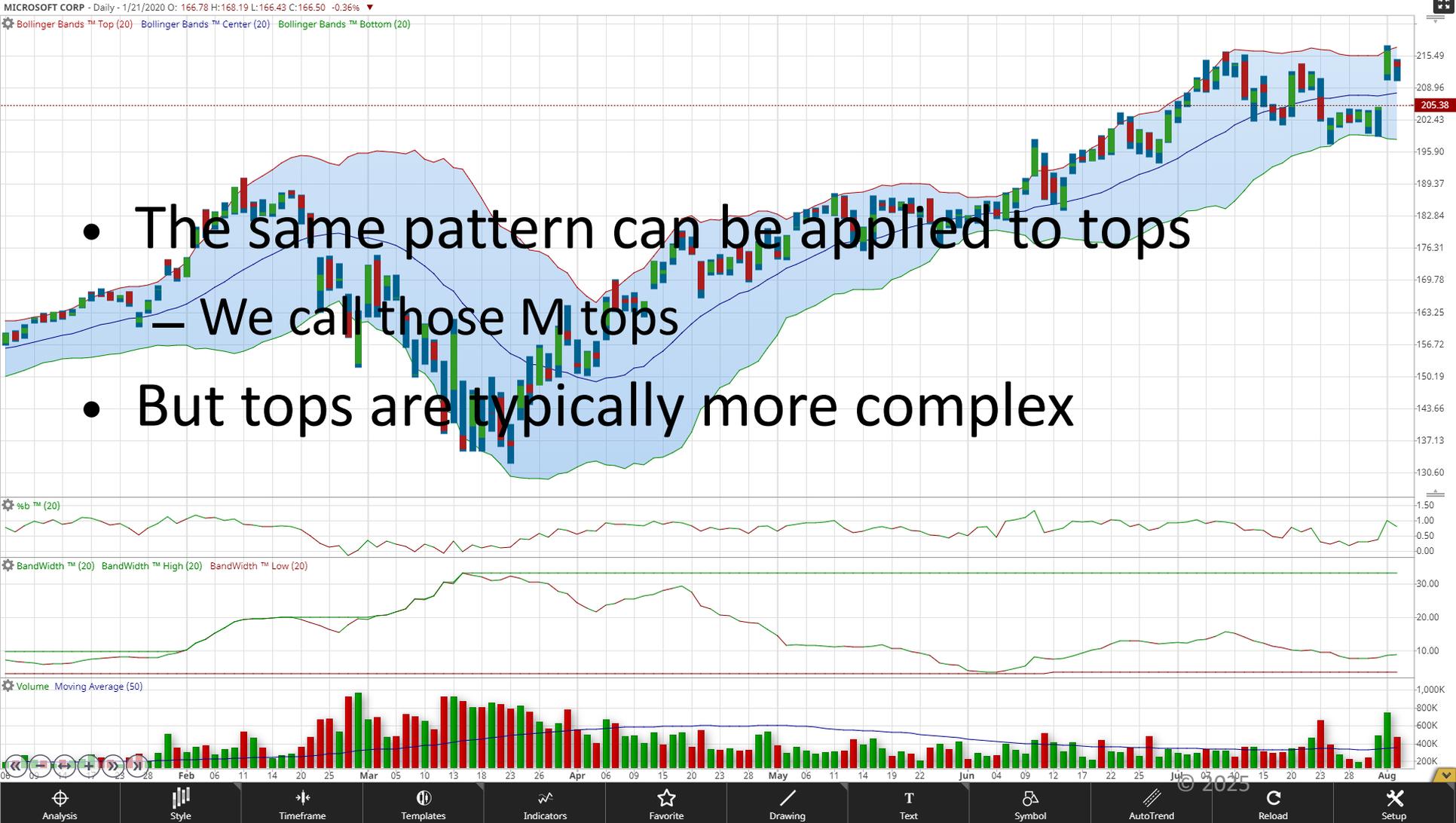


# META - Daily

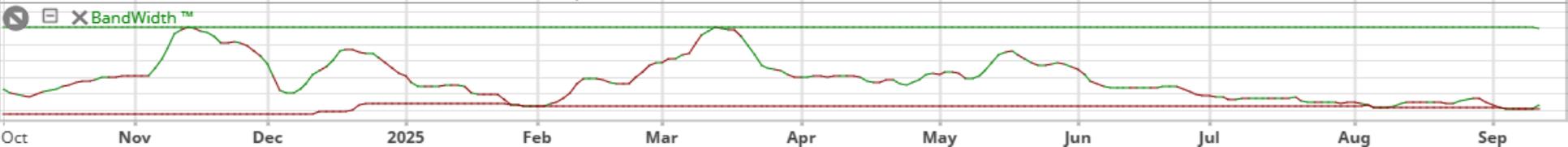
X Bollinger Bands™

X %b™





# TSLA Daily

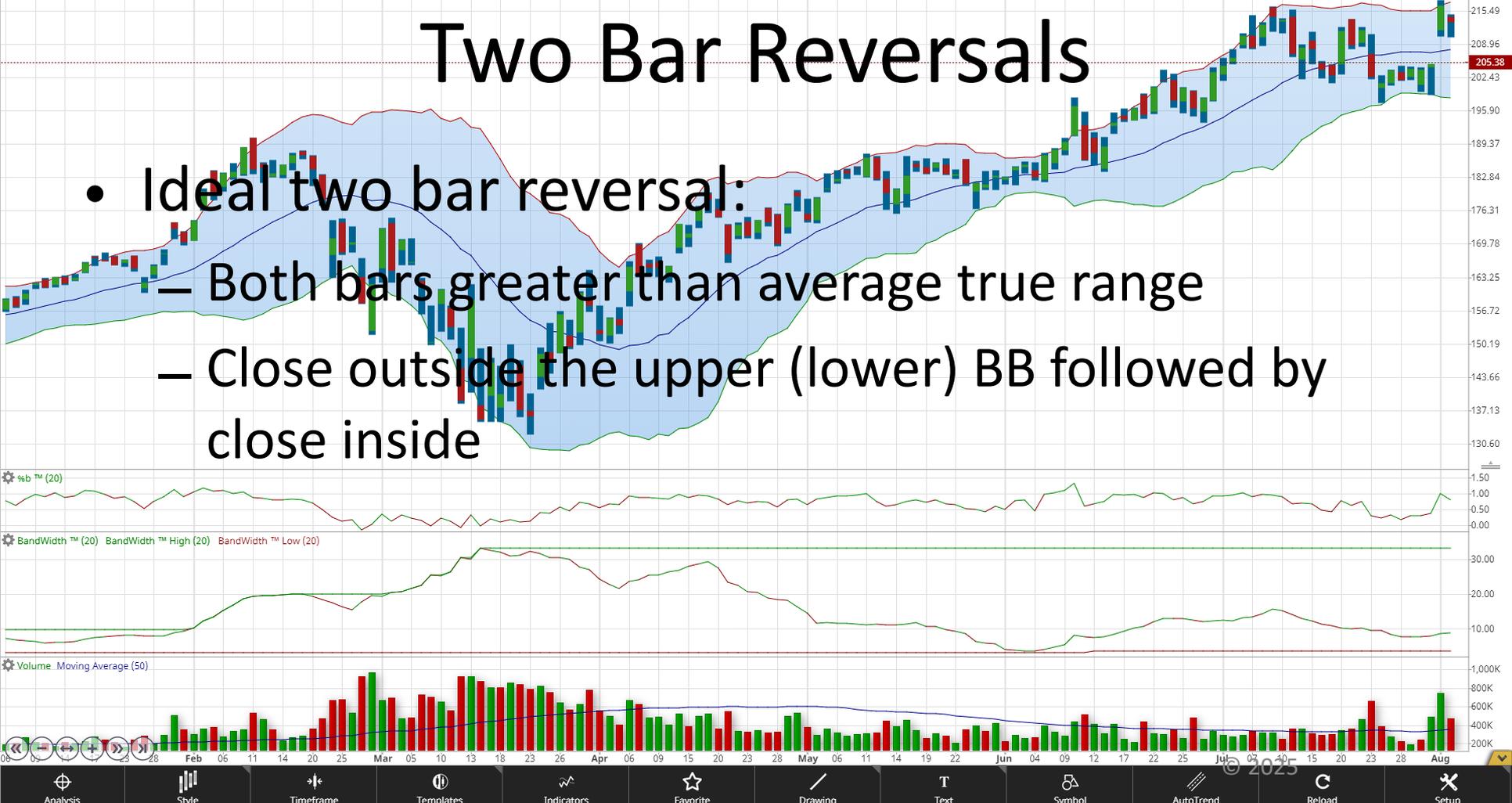


# BLD - Daily



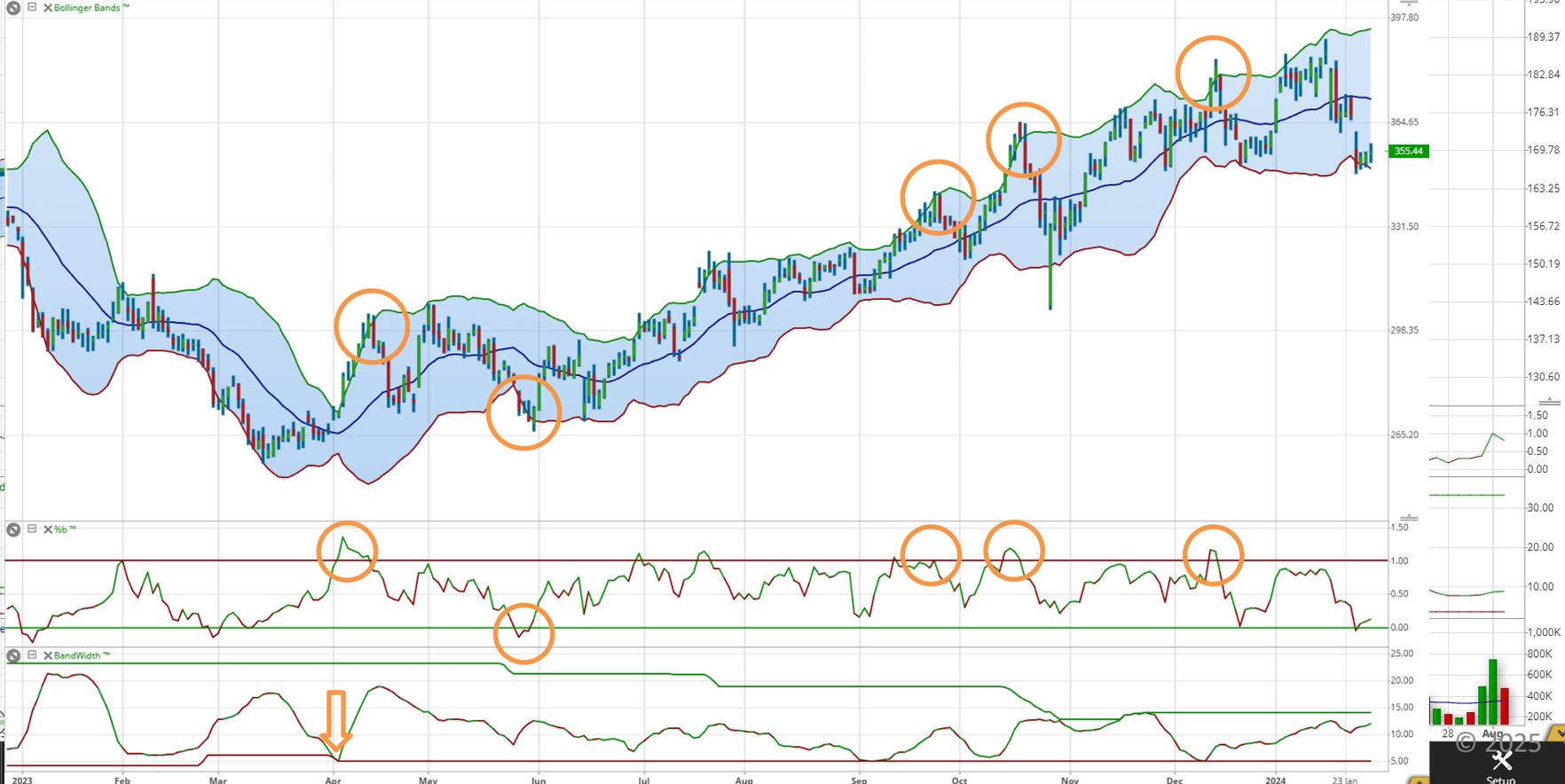
# Two Bar Reversals

- Ideal two bar reversal:
  - Both bars greater than average true range
  - Close outside the upper (lower) BB followed by close inside



# Molina Health Two Bar Reversals

MOLINA HEALTHCARE INC - Daily - 1/29/2024 O: 351.79 H:355.29 L:350.41 C:354.68 +0.30% ▲



# Tags of the Bands

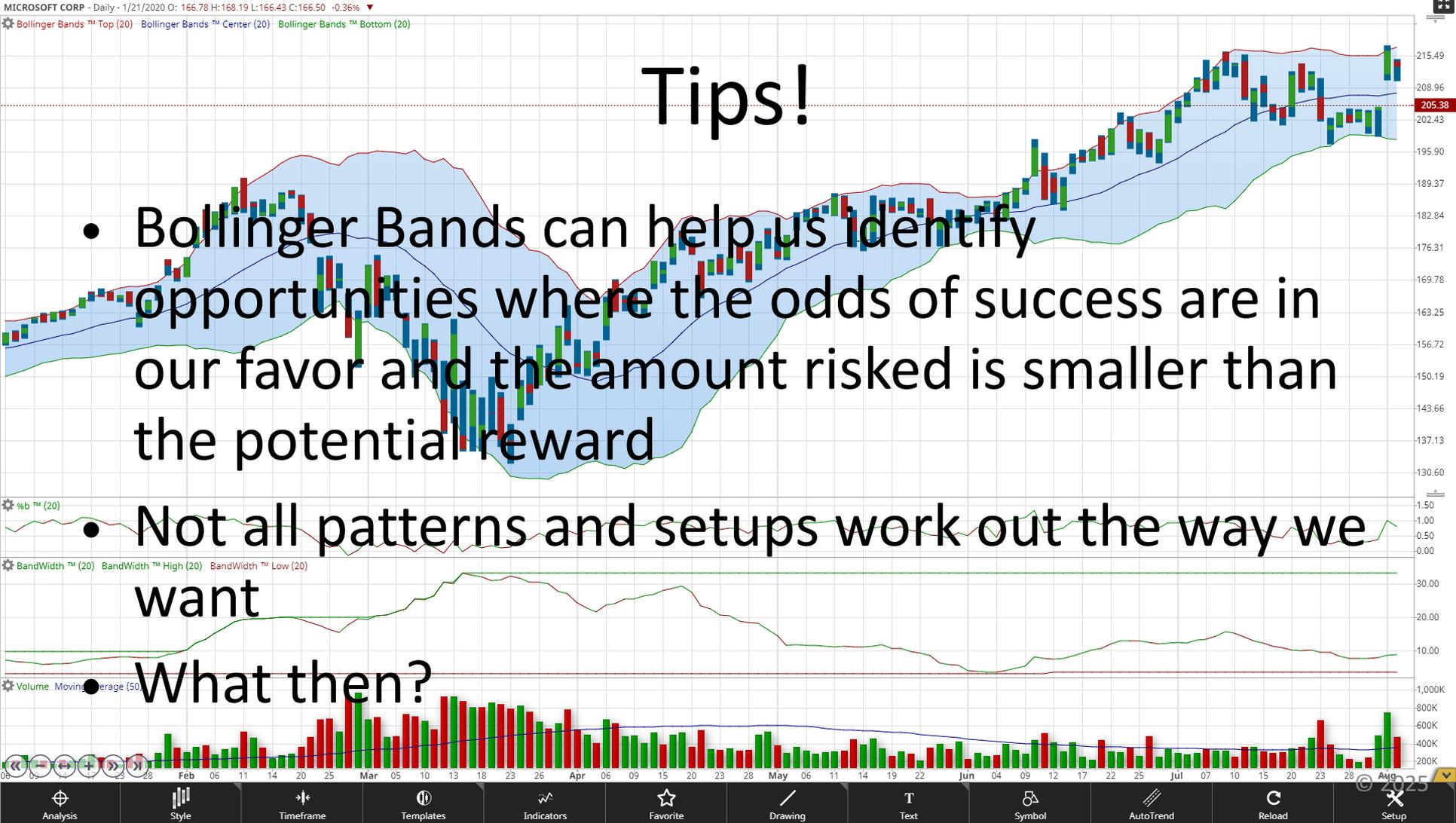
- Not inherently reversals

%b™ (20)

BandWidth™ (20) BandWidth™ High (20) BandWidth™ Low (20)

Volume Moving Average (50)





# Tips!

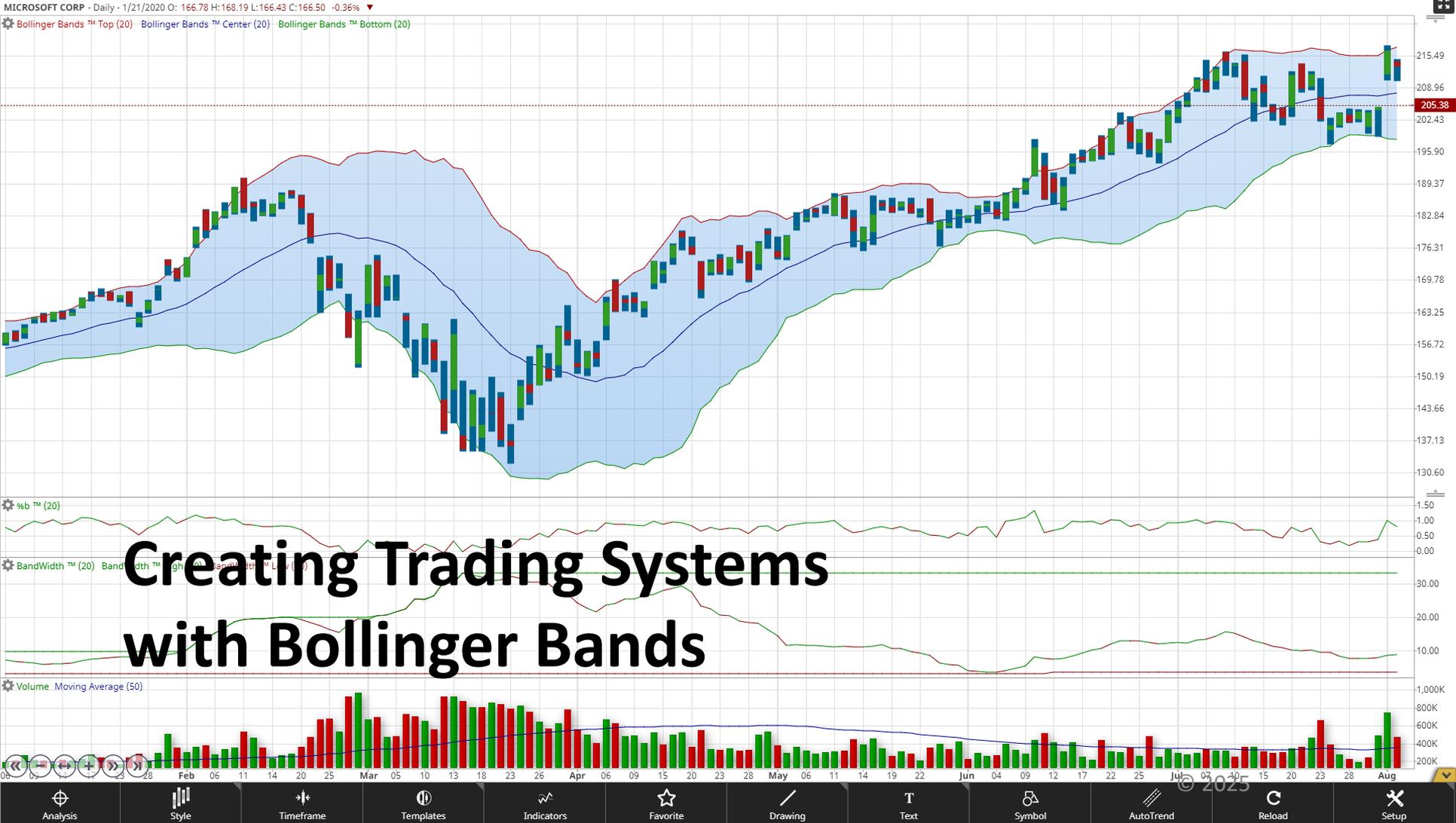
- Bollinger Bands can help us identify opportunities where the odds of success are in our favor and the amount risked is smaller than the potential reward
- Not all patterns and setups work out the way we want
- What then?





## 2. Use Stops

- I like progressive stops like Chandeliers
- The type of stop matters less than establishing a point where you exit a trade that moves against you



# Creating Trading Systems with Bollinger Bands

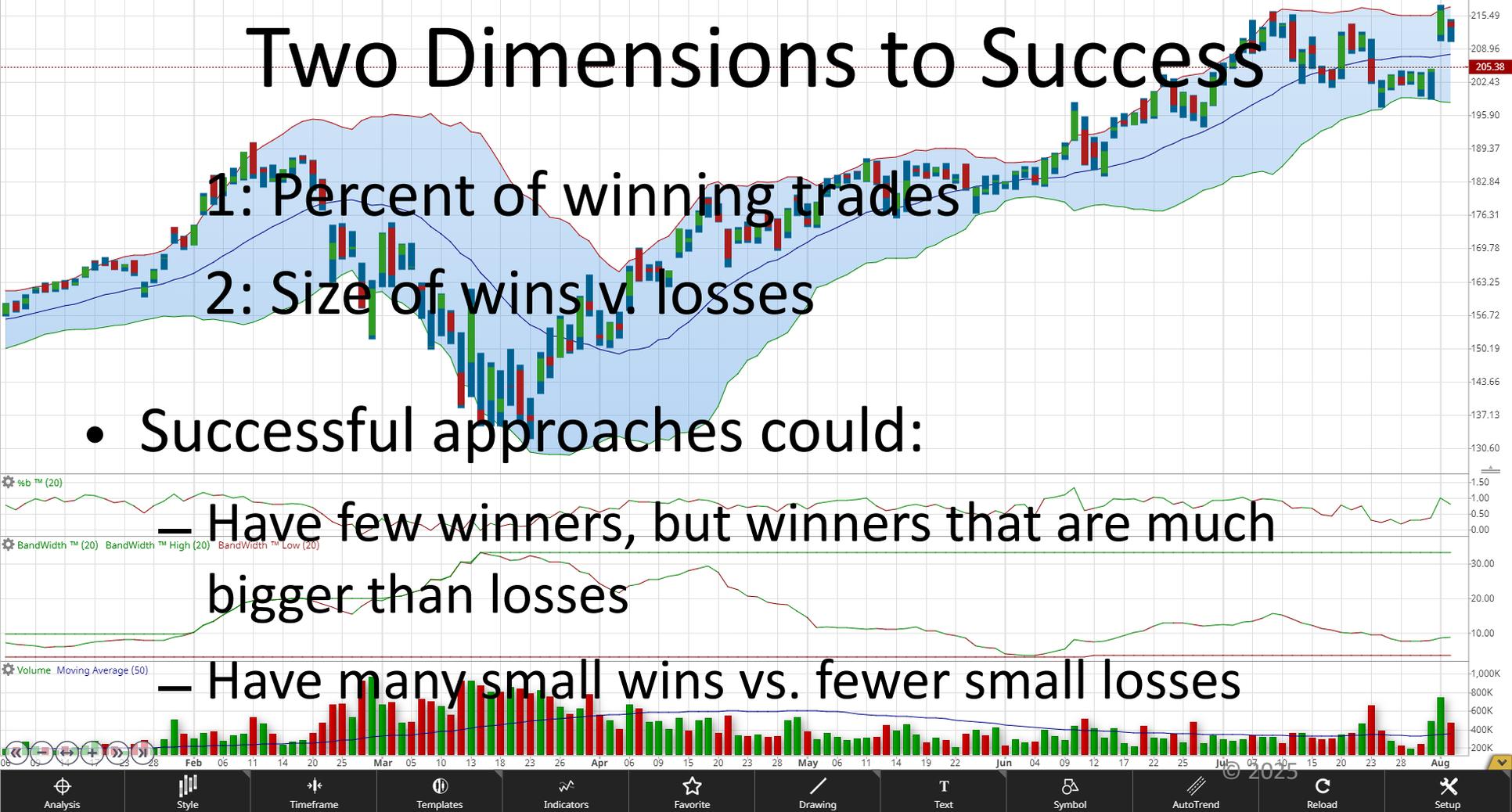
# Two Dimensions to Success

- 1: Percent of winning trades
- 2: Size of wins v. losses

- Successful approaches could:

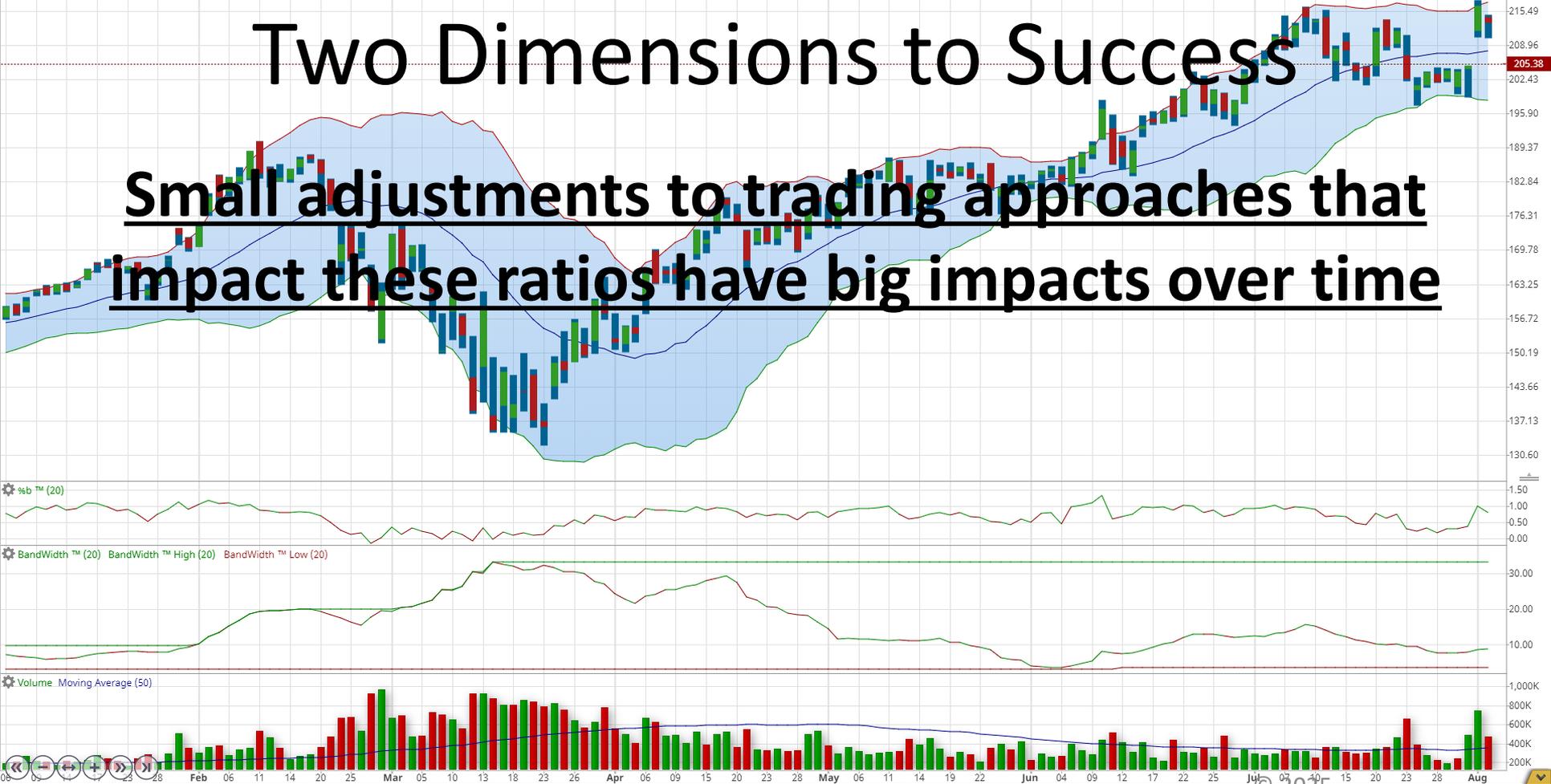
- Have few winners, but winners that are much bigger than losses

- Have many small wins vs. fewer small losses



# Two Dimensions to Success

Small adjustments to trading approaches that impact these ratios have big impacts over time



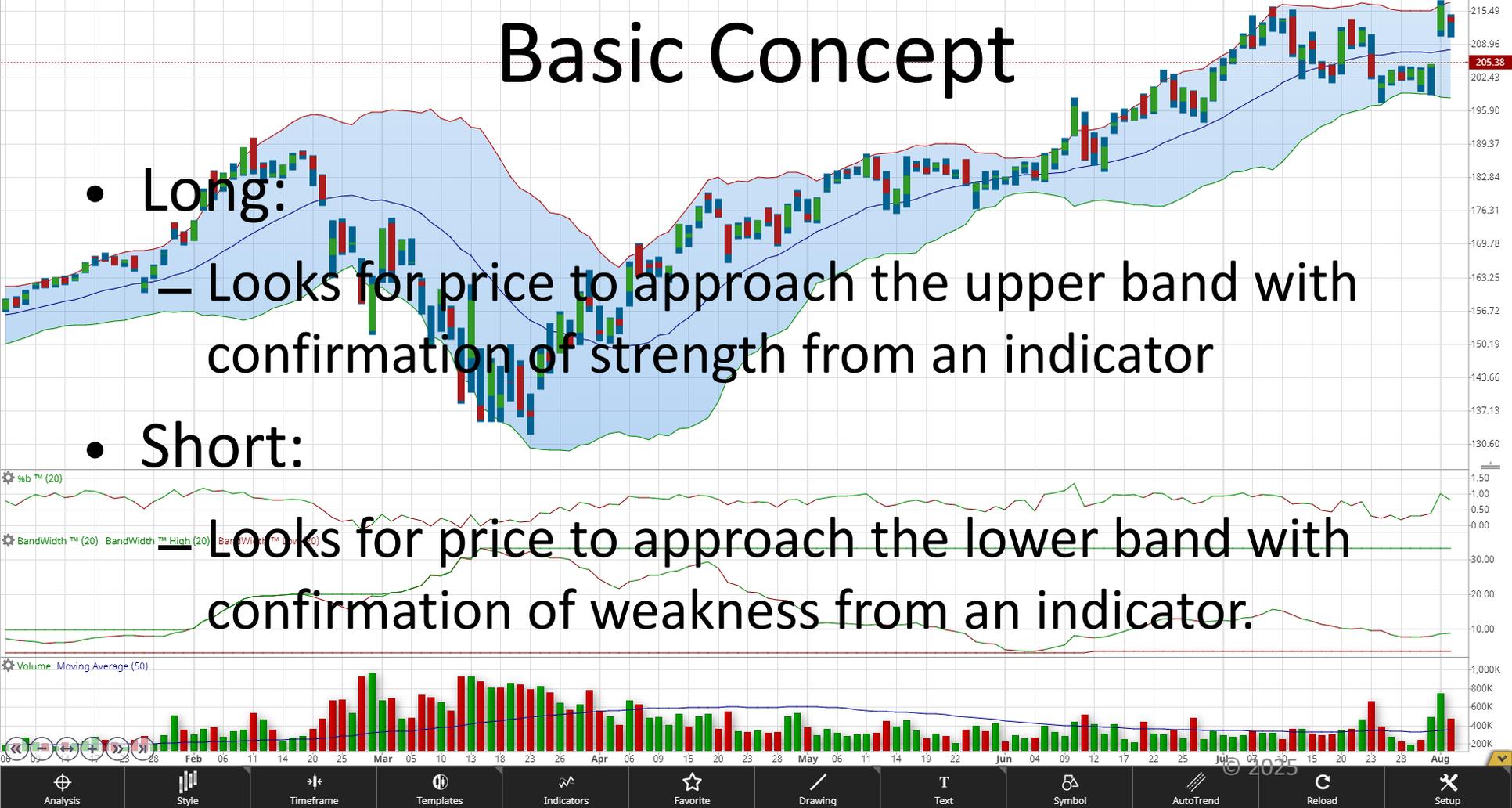
# Today's Example

- Bollinger Bands Method II: Trend Following
  - Core Idea: Strong price action accompanied by strong indicator action is a good thing.
- Published 2001



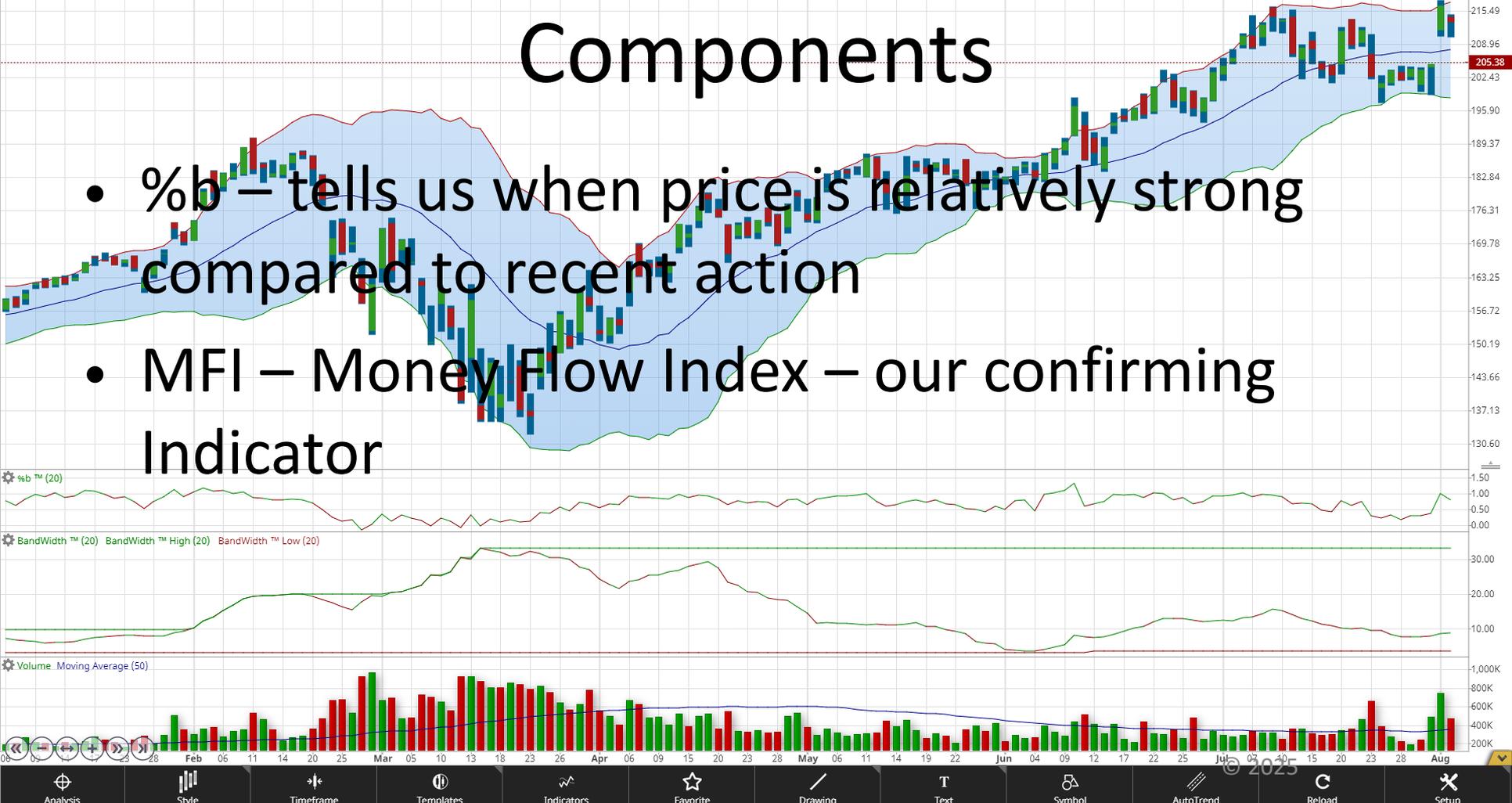
# Basic Concept

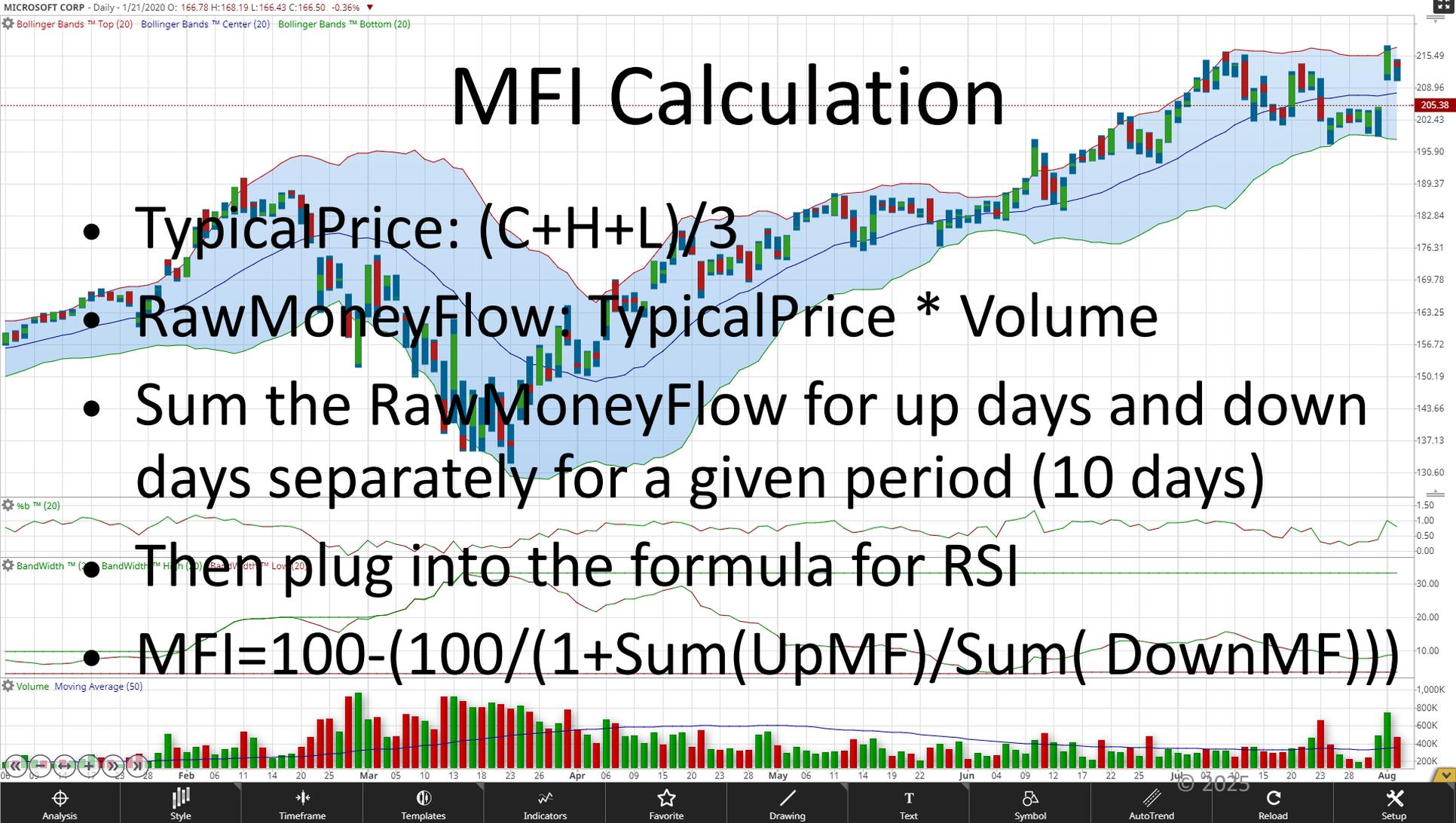
- Long:
  - Looks for price to approach the upper band with confirmation of strength from an indicator
- Short:
  - Looks for price to approach the lower band with confirmation of weakness from an indicator.



# Components

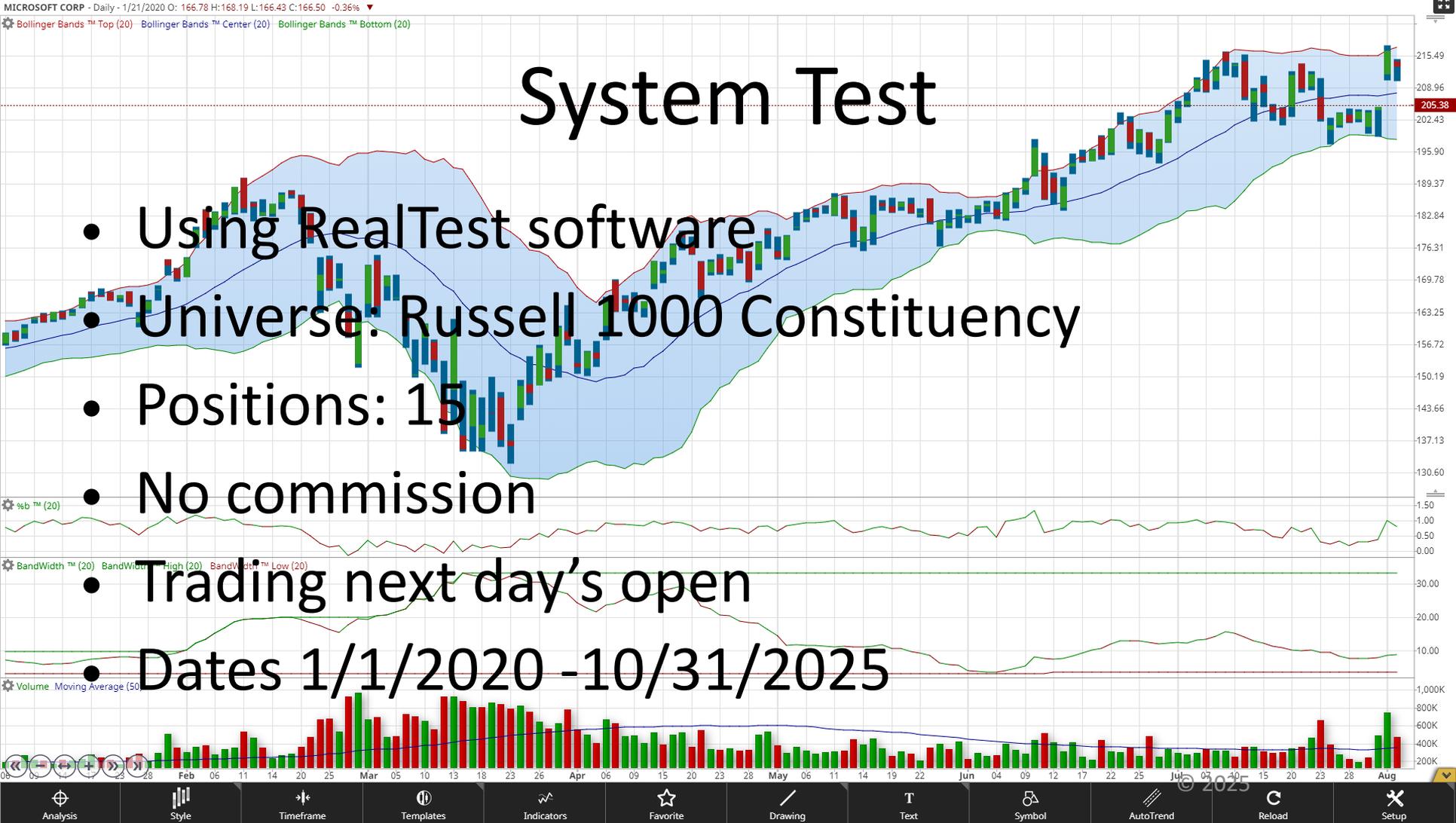
- %b – tells us when price is relatively strong compared to recent action
- MFI – Money Flow Index – our confirming Indicator





# MFI Calculation

- Typical Price:  $(C+H+L)/3$
- Raw Money Flow: Typical Price \* Volume
- Sum the Raw Money Flow for up days and down days separately for a given period (10 days)
- Then plug into the formula for RSI
- $MFI=100-(100/(1+Sum(UpMF)/Sum(DownMF)))$



# System Test

- Using RealTest software
- Universe: Russell 1000 Constituency
- Positions: 15
- No commission
- Trading next day's open
- Dates 1/1/2020 -10/31/2025

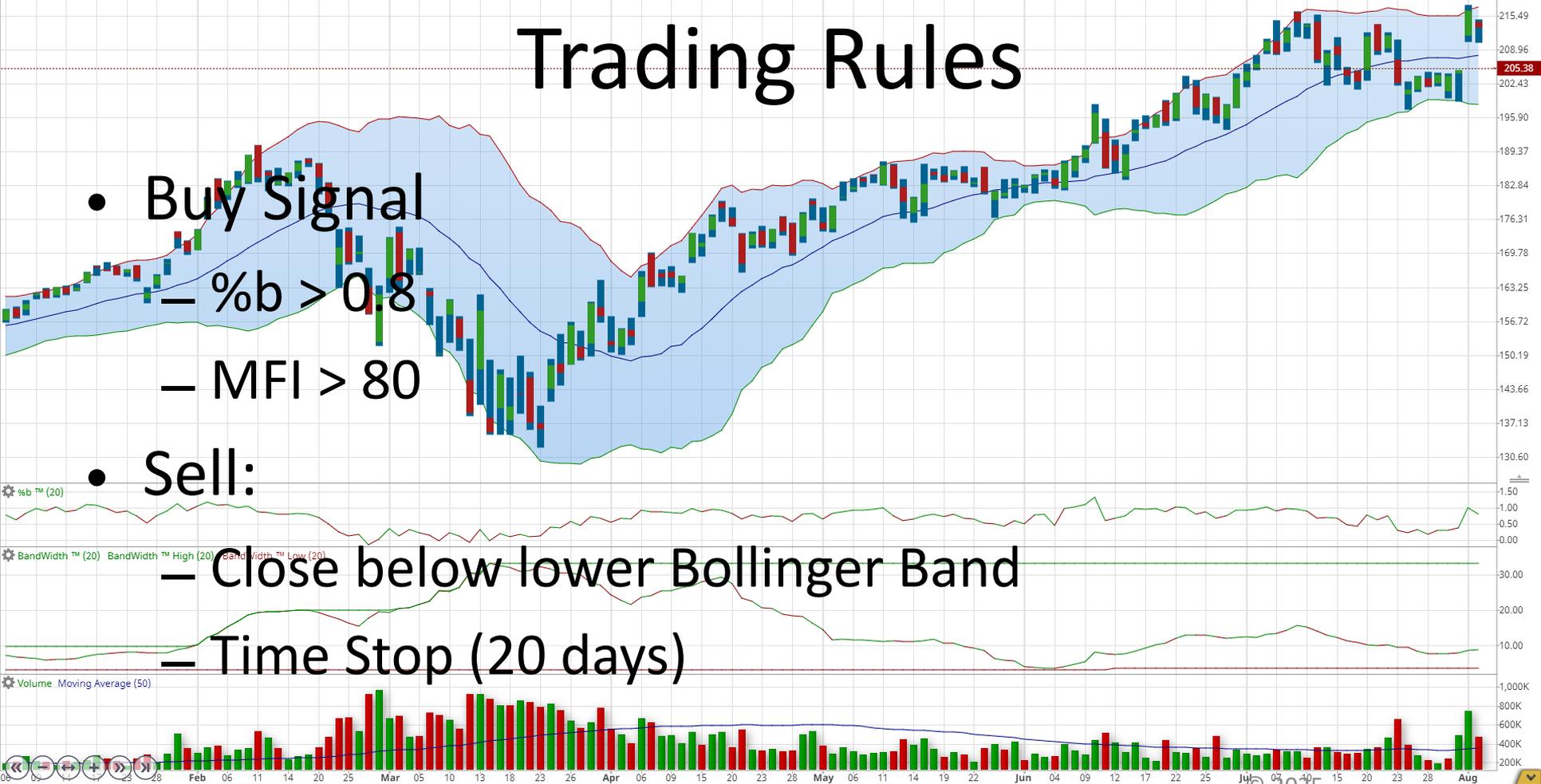
# Trading Rules

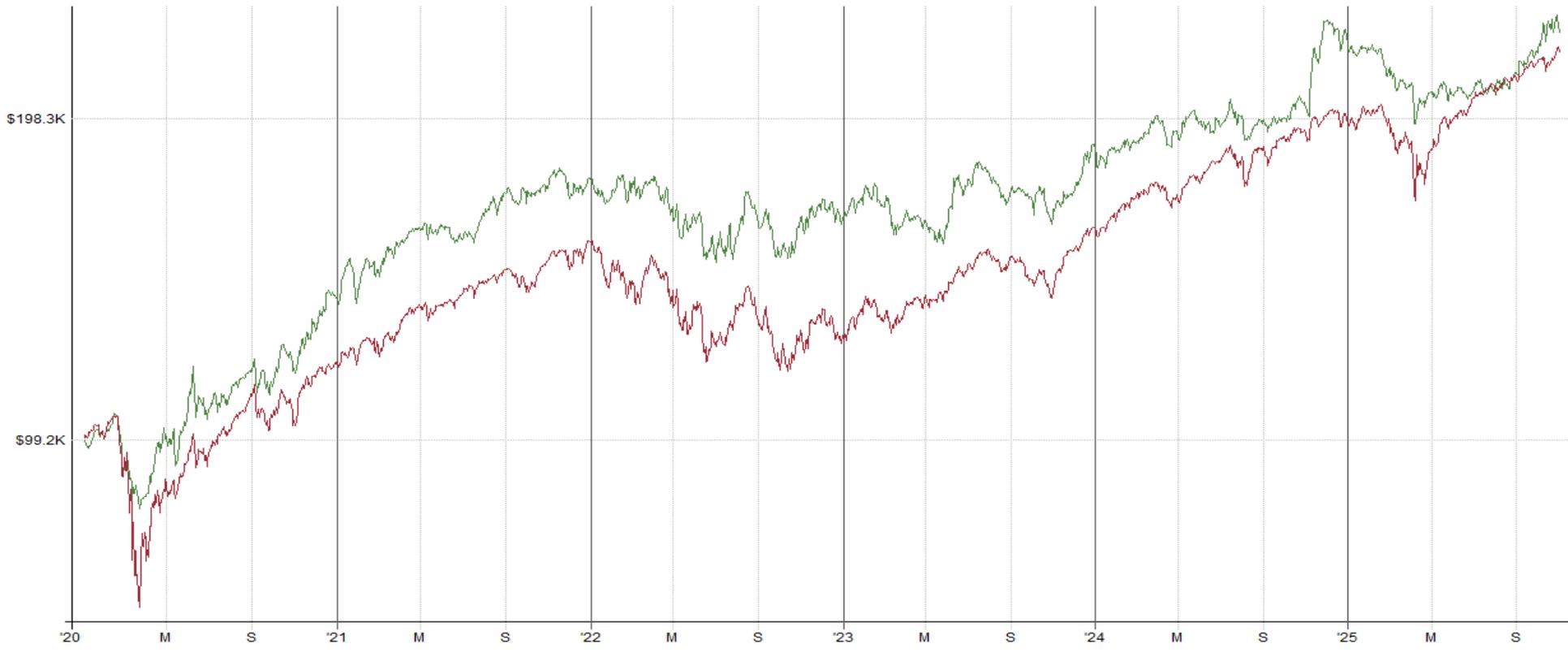
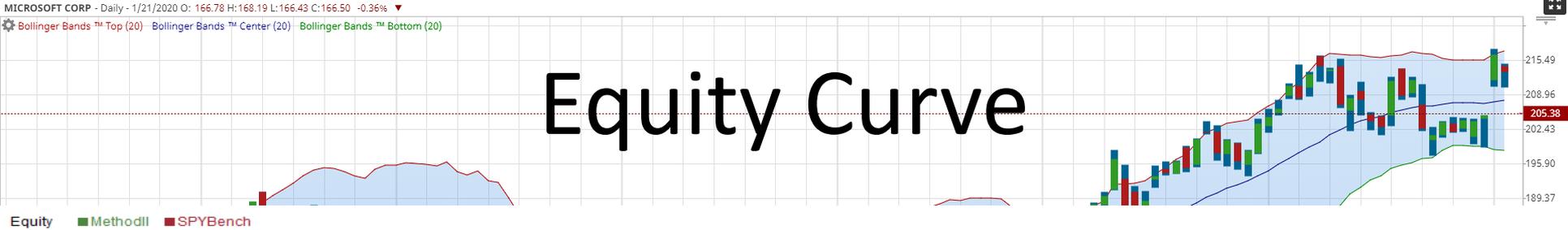
- Buy Signal

- %b > 0.8
- MFI > 80

- Sell:

- Close below lower Bollinger Band
- Time Stop (20 days)





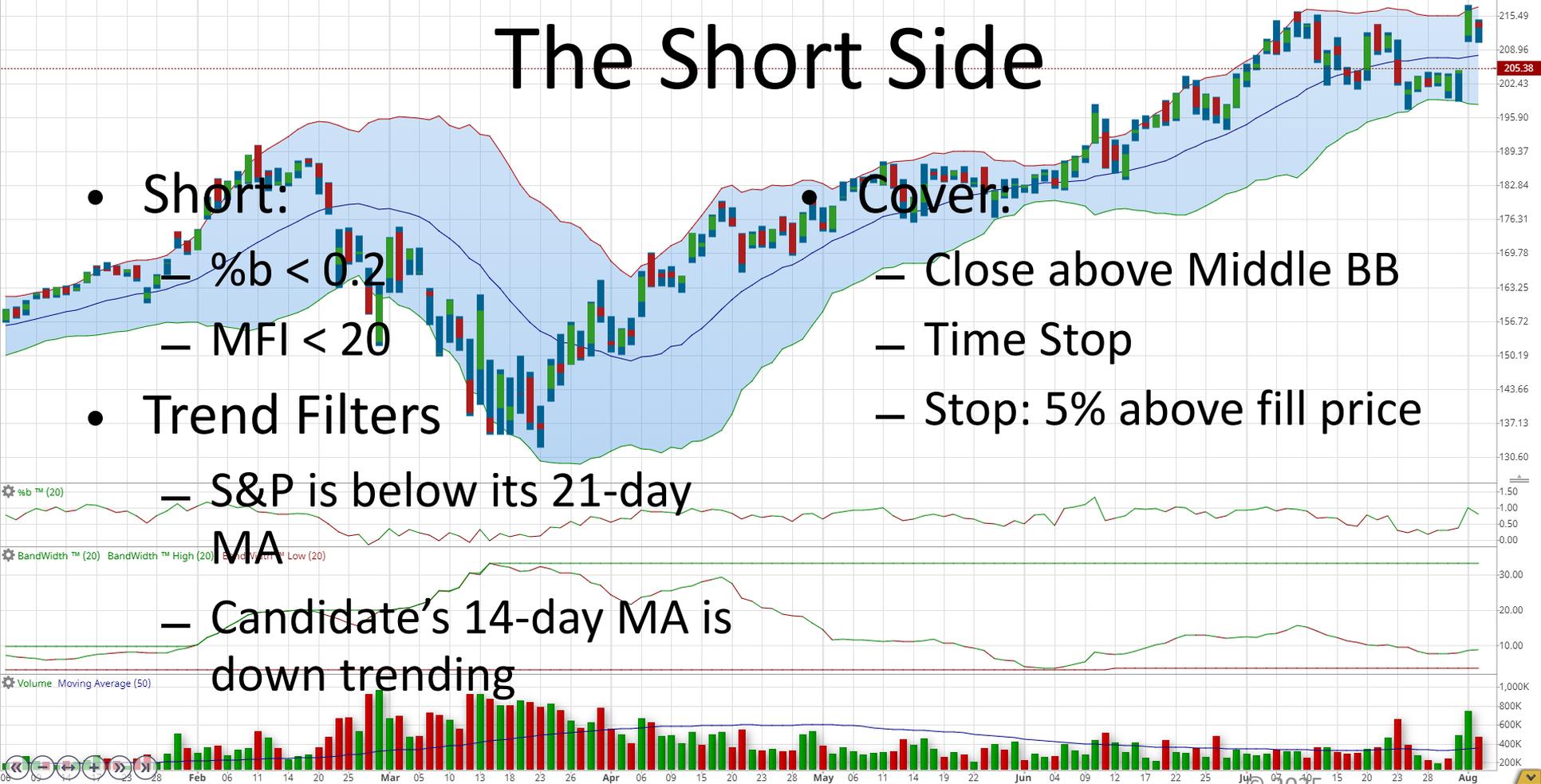
# Statistics

	Method II	SPY
ROR	16.38%	15.26%
MaxDD	-20.14%	-33.81%
Pct Wins	54.69%	-
Avg. Win	7.89%	-
Avg. Loss	6.77%	-

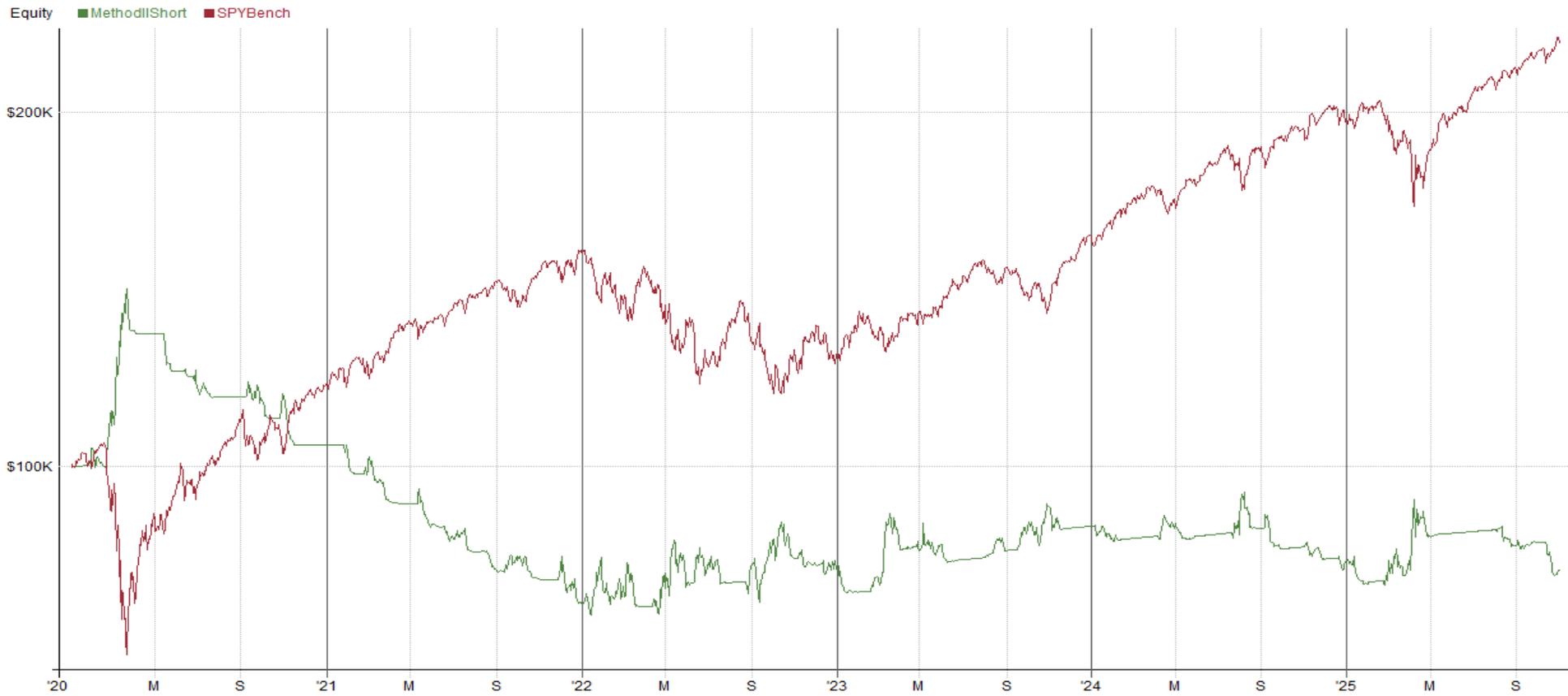
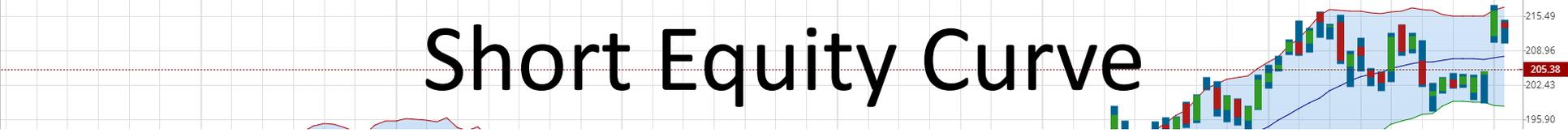


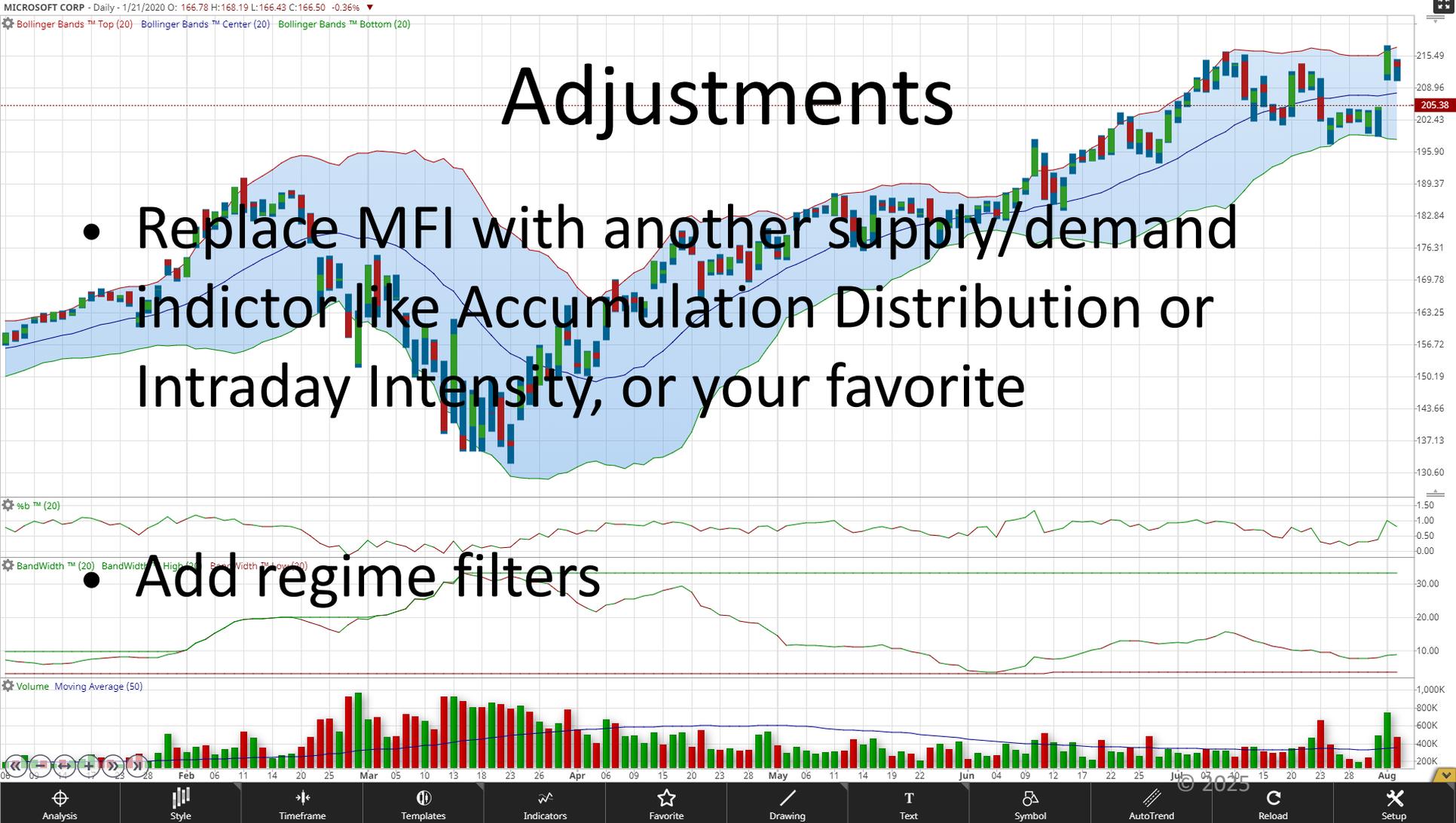
# The Short Side

- Short:
  - %b < 0.2
  - MFI < 20
- Trend Filters
  - S&P is below its 21-day MA
  - Candidate's 14-day MA is down trending
- Cover:
  - Close above Middle BB
  - Time Stop
  - Stop: 5% above fill price



# Short Equity Curve





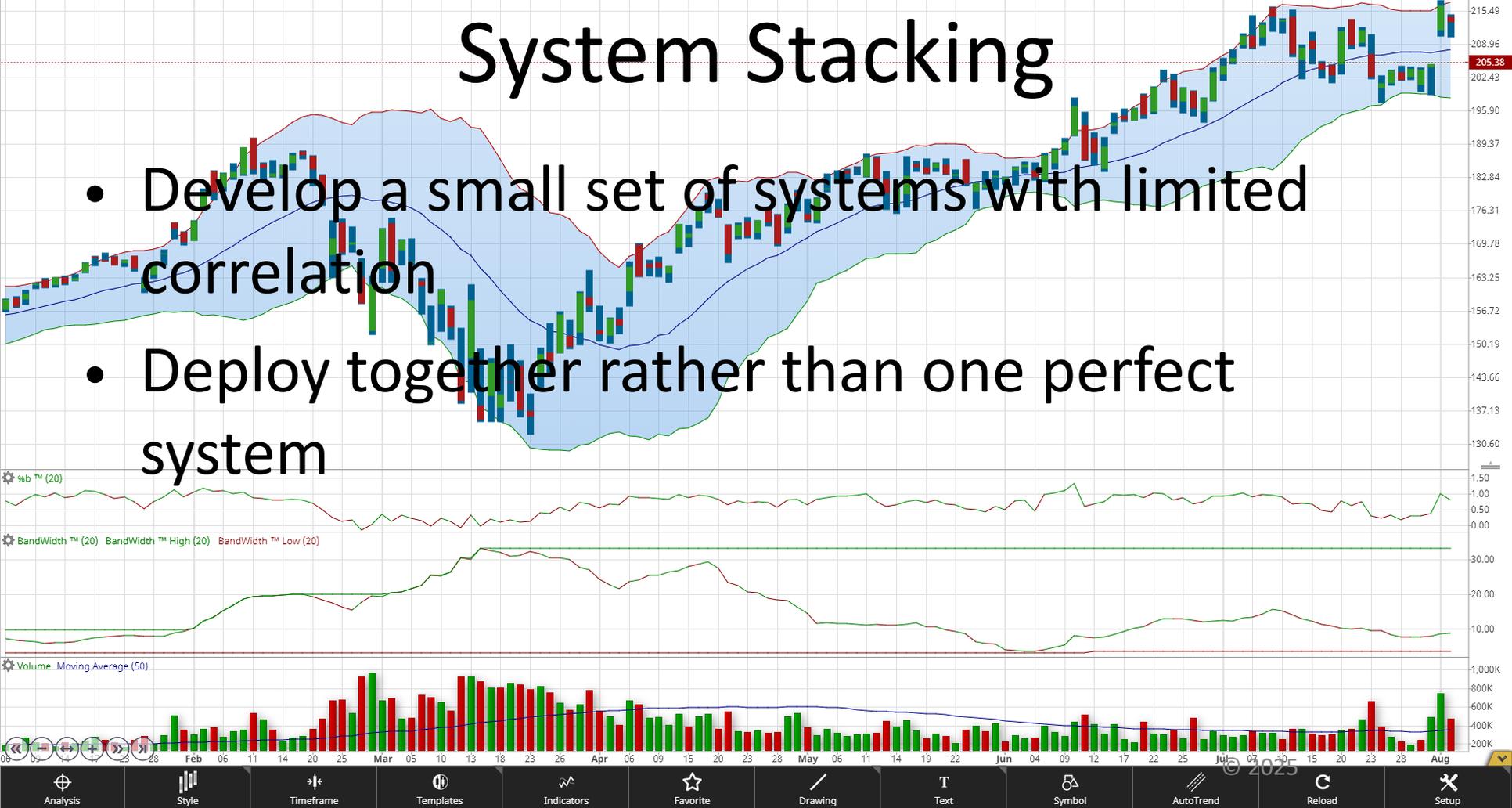
# Adjustments

- Replace MFI with another supply/demand indicator like Accumulation Distribution or Intraday Intensity, or your favorite

- Add regime filters

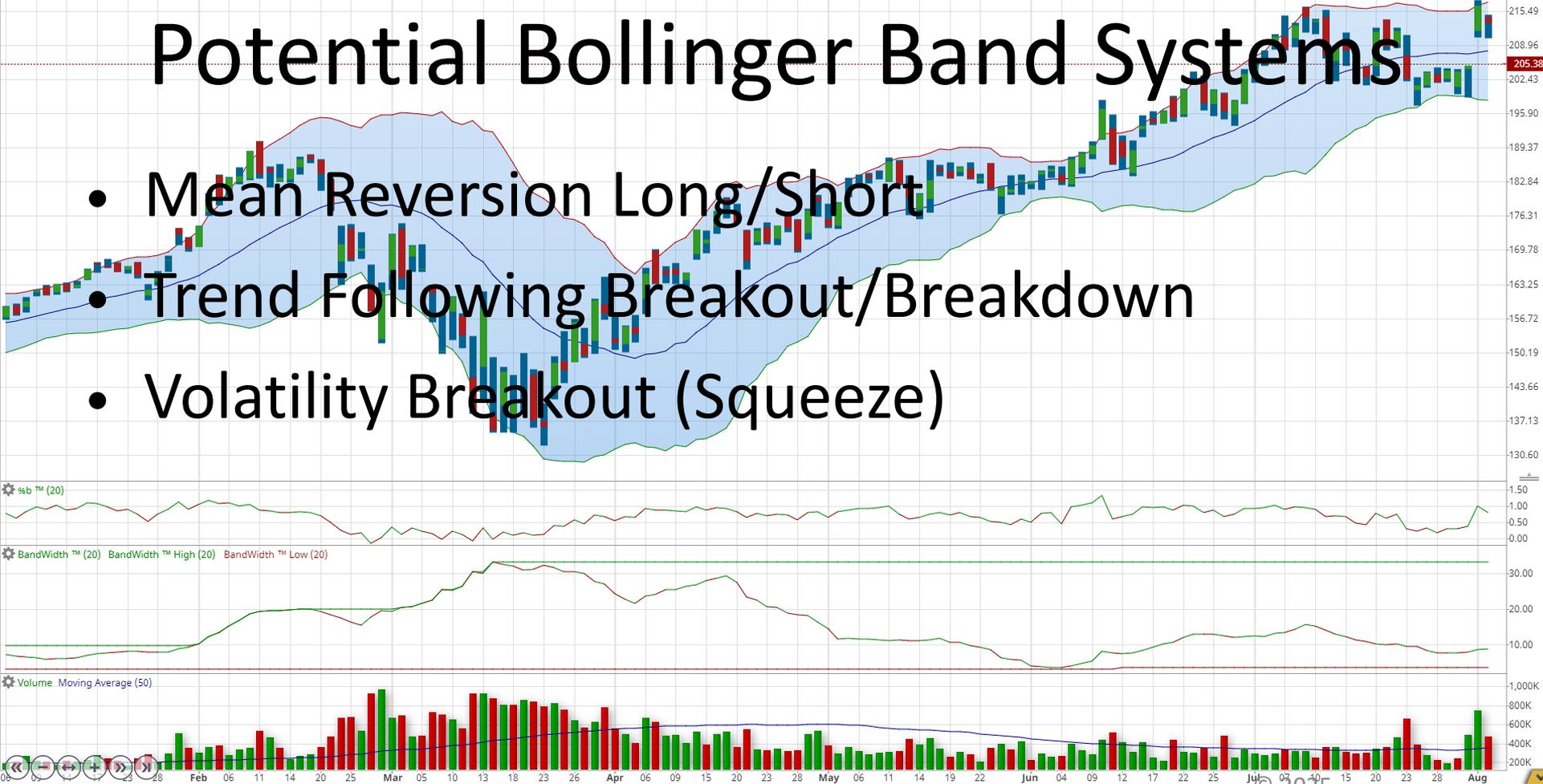
# System Stacking

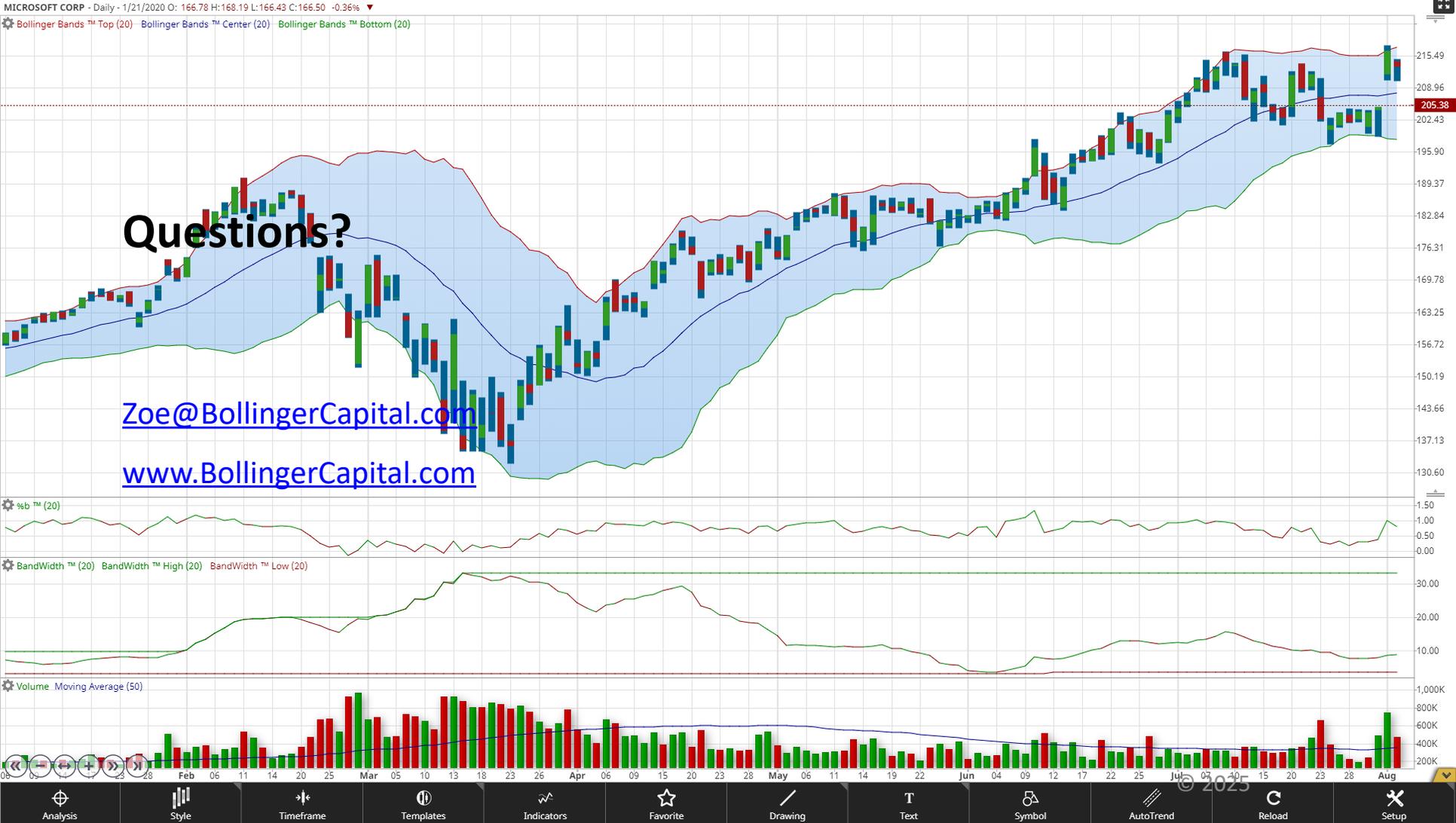
- Develop a small set of systems with limited correlation
- Deploy together rather than one perfect system

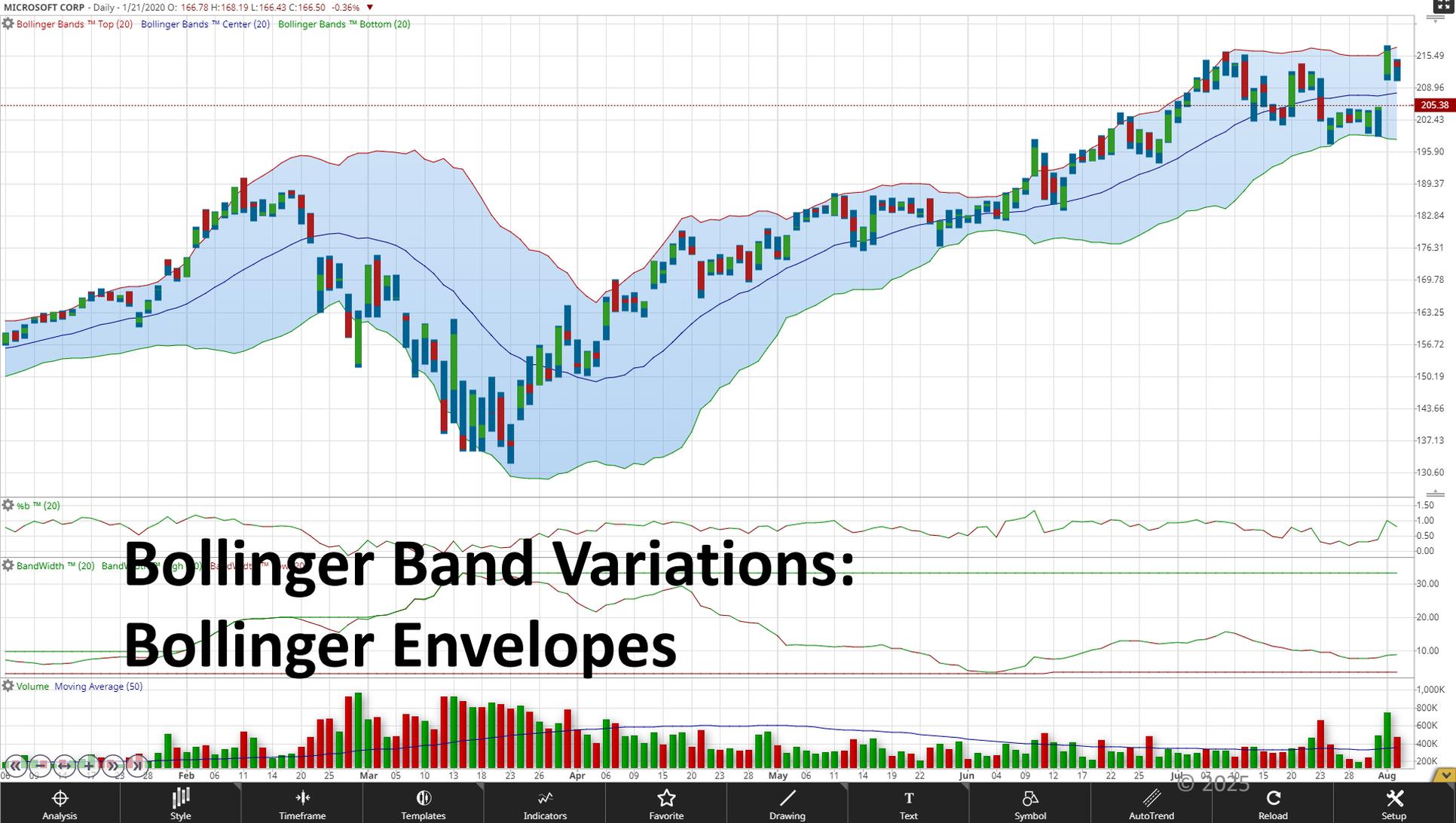


# Potential Bollinger Band Systems

- Mean Reversion Long/Short
- Trend Following Breakout/Breakdown
- Volatility Breakout (Squeeze)







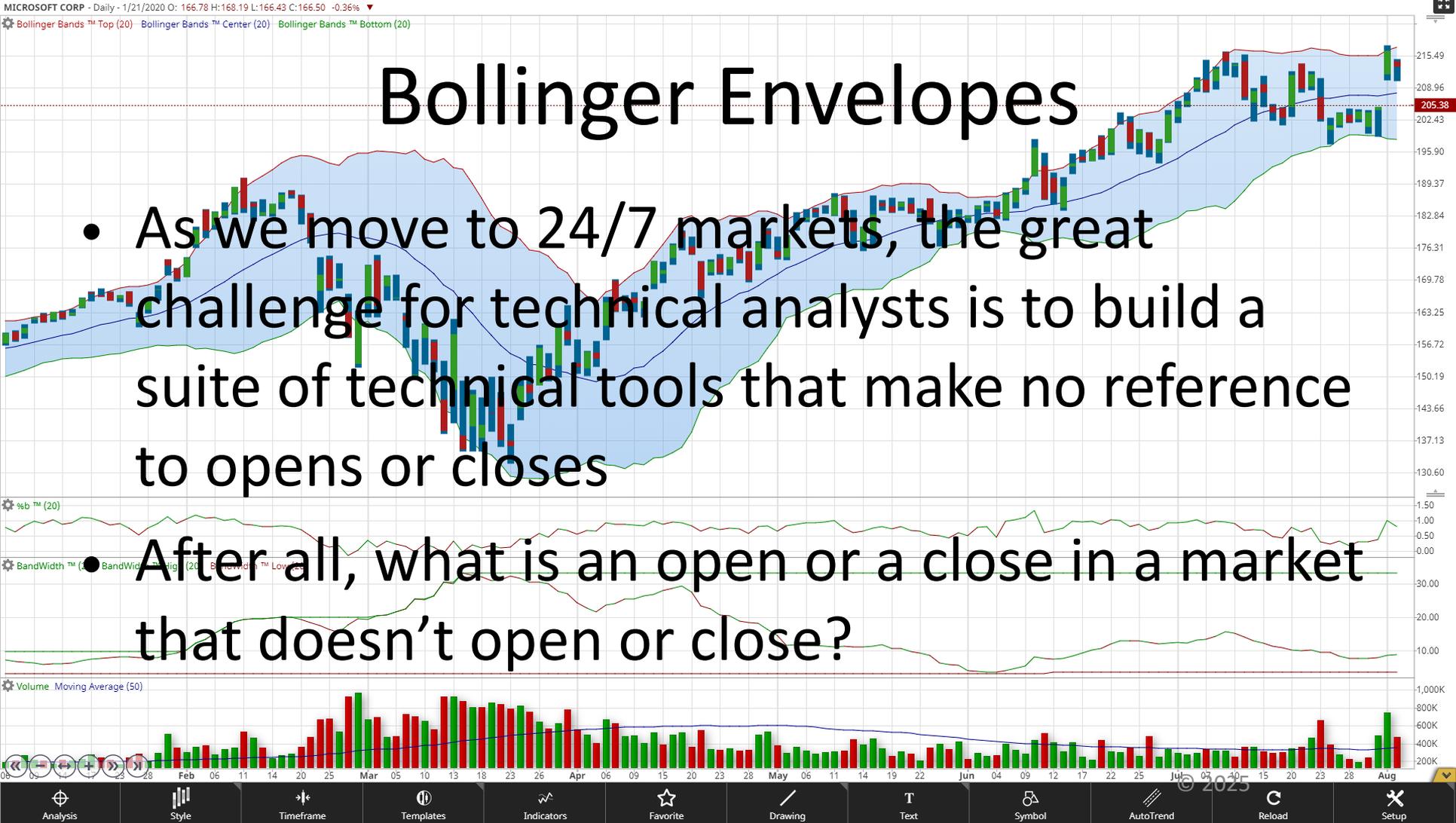
MICROSOFT CORP - Daily - 1/21/2020 O: 166.78 H:168.19 L:166.43 C:166.50 -0.36%  
Bollinger Bands™ Top (20) Bollinger Bands™ Center (20) Bollinger Bands™ Bottom (20)

%b™ (20)

BandWidth™ (20) BandWidth™ (10) BandWidth™ (5)

Volume Moving Average (50)

# Bollinger Band Variations: Bollinger Envelopes

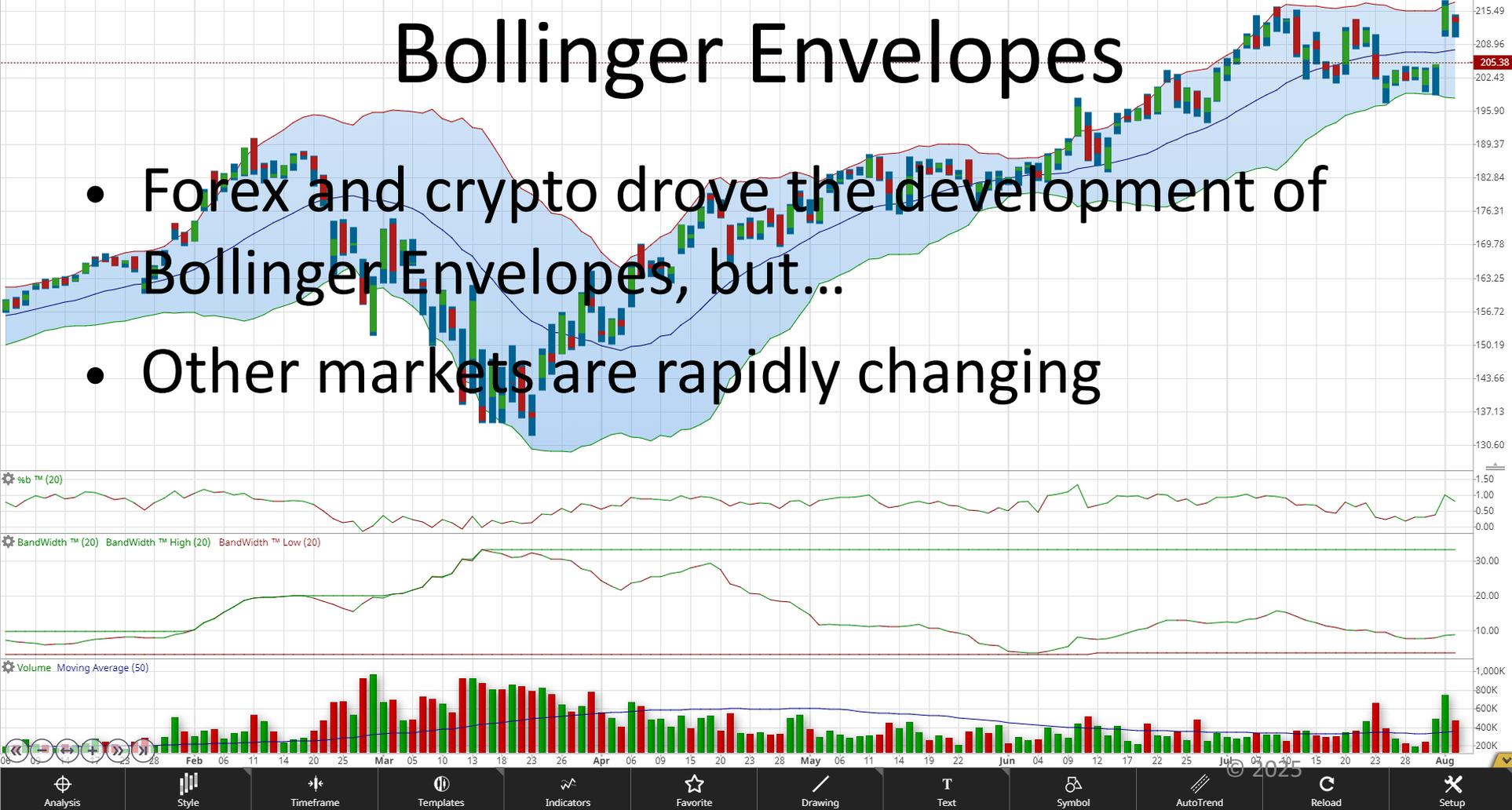


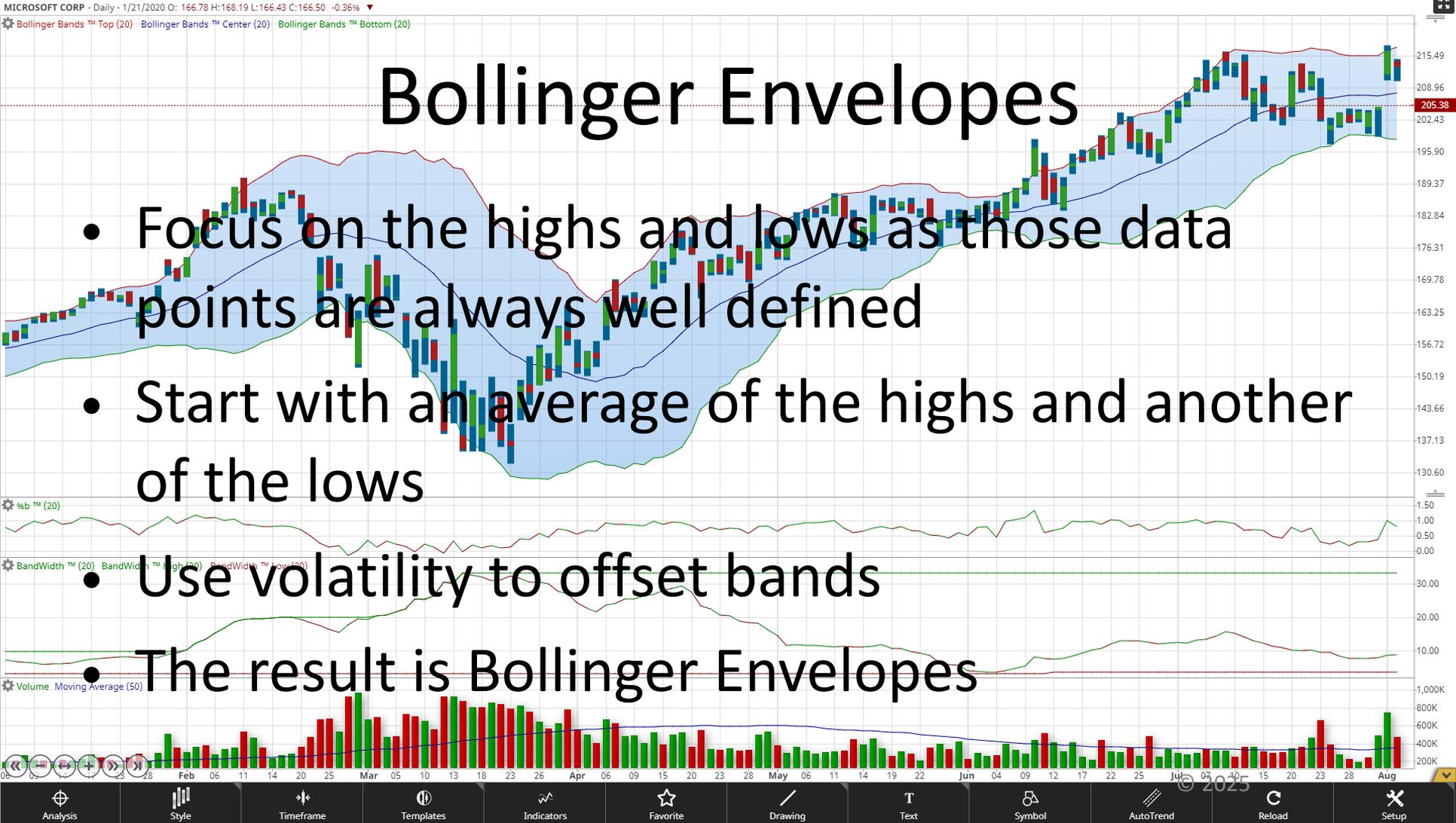
# Bollinger Envelopes

- As we move to 24/7 markets, the great challenge for technical analysts is to build a suite of technical tools that make no reference to opens or closes
- After all, what is an open or a close in a market that doesn't open or close?

# Bollinger Envelopes

- Forex and crypto drove the development of Bollinger Envelopes, but...
- Other markets are rapidly changing





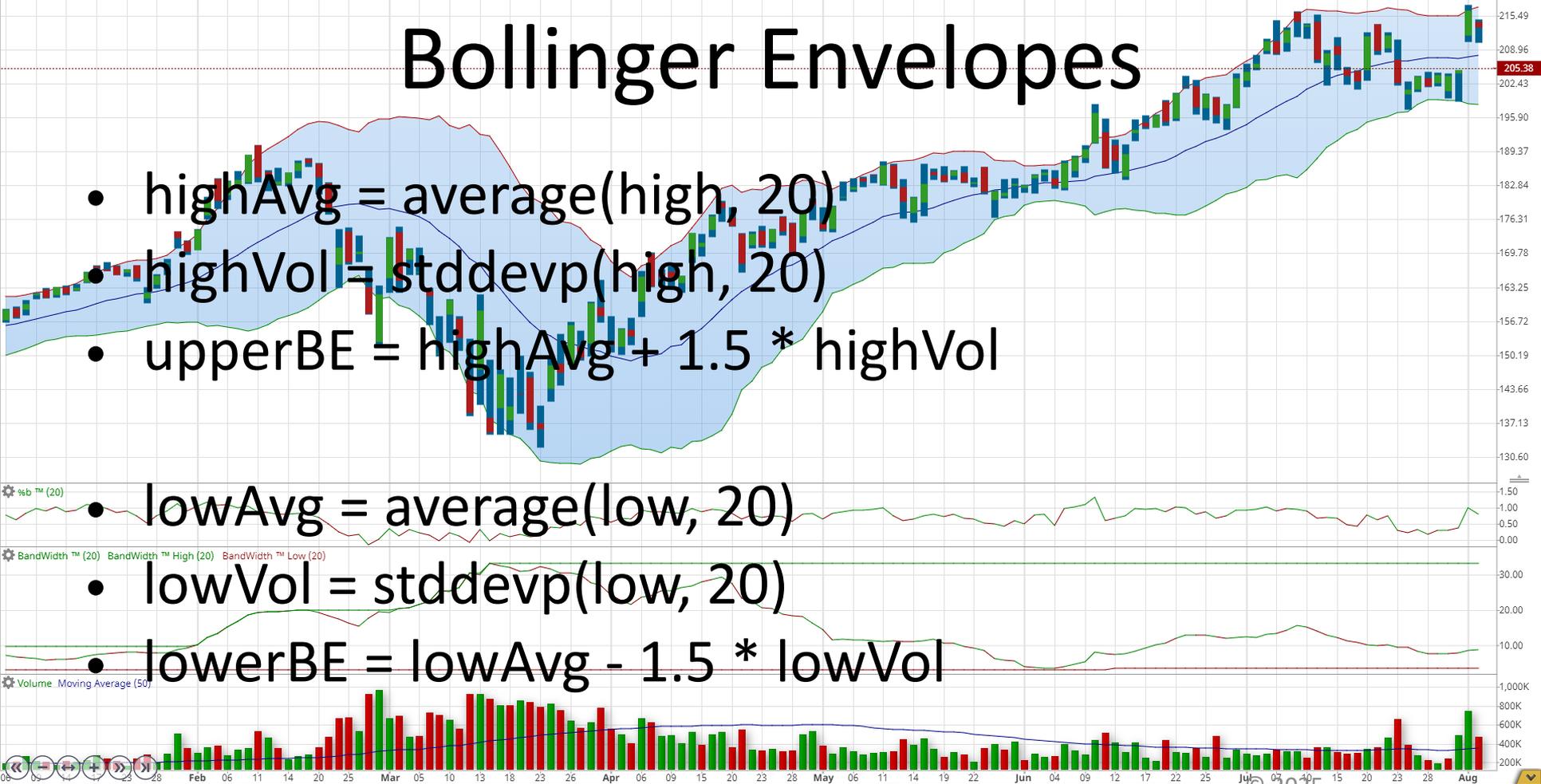
# Bollinger Envelopes

- Focus on the highs and lows as those data points are always well defined
- Start with an average of the highs and another of the lows
- Use volatility to offset bands
- The result is Bollinger Envelopes

# Bollinger Envelopes

- $highAvg = average(high, 20)$
- $highVol = stddevp(high, 20)$
- $upperBE = highAvg + 1.5 * highVol$

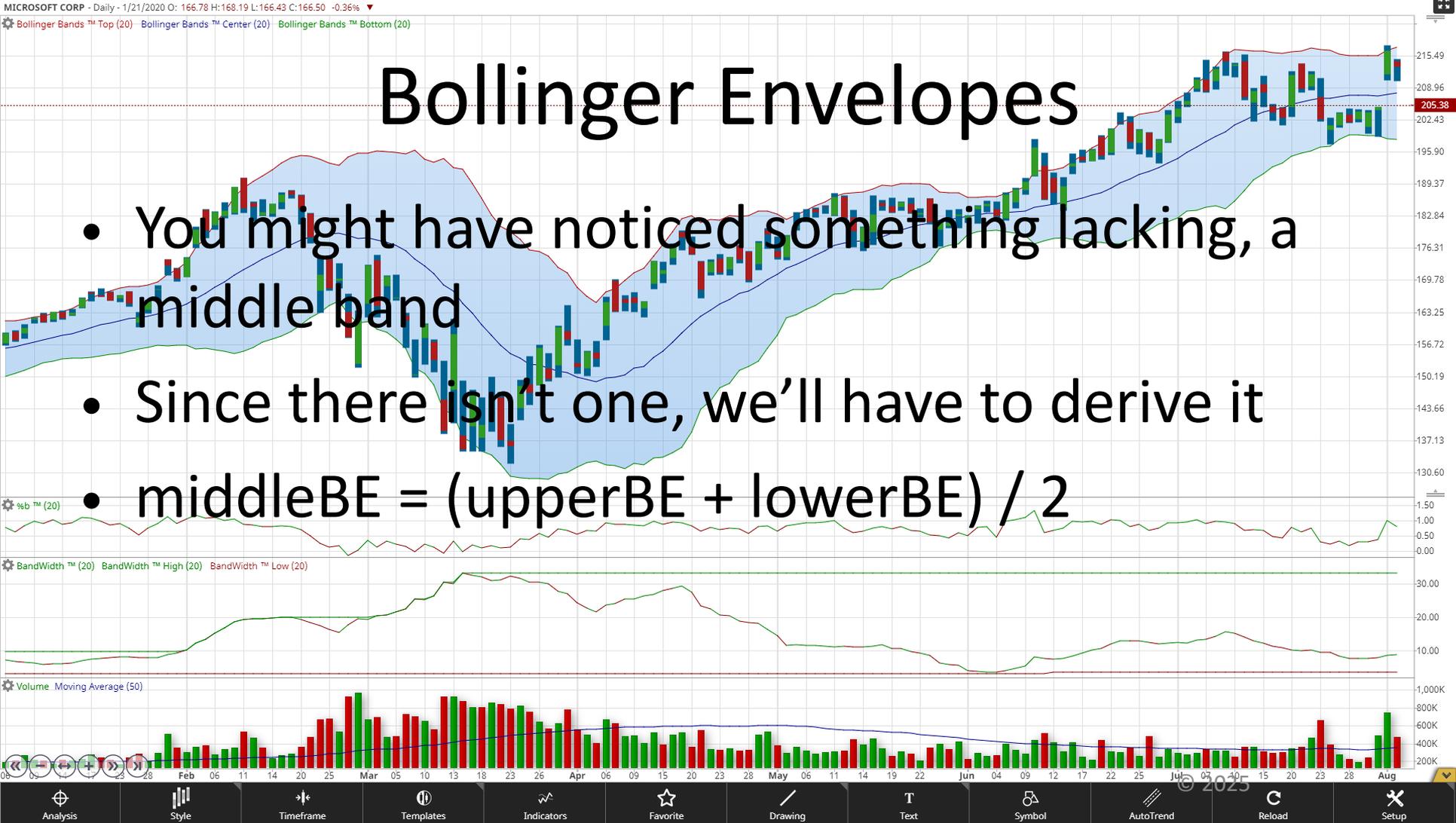
- $lowAvg = average(low, 20)$
- $lowVol = stddevp(low, 20)$
- $lowerBE = lowAvg - 1.5 * lowVol$



# Bollinger Envelopes

- Why the multiplier of 1.5?
- It gave the best fit to classic Bollinger Bands across multiple assets





# Bollinger Envelopes

- You might have noticed something lacking, a middle band
- Since there isn't one, we'll have to derive it
- $middleBE = (upperBE + lowerBE) / 2$

# Bollinger Envelopes

- The fit to classic Bollinger Bands is quite good across time, but...
- Unlike classic Bollinger Bands, they are asymmetrical

%b™ (20)

BandWidth™ (20) BandWidth™ High (20) BandWidth™ Low (20)

Volume Moving Average (50)

# NVDA Bands & Envelopes

