



Waverly
Advisors

Multiple Timeframe Analysis

The Power of Perspective

Outline

- What is multiple timeframe (MTF) analysis?
- Why do some traders use it?
- Some common misconceptions.
- Concepts in multiple timeframe analysis
- Practical application



Timeframes

- Traders often look at market data as bars or candles.
- The “timeframe” of a chart is the length of one of those bars.
 - E.g., 5 minute, daily, monthly
- Other (non-time-based) divisions are possible, but simplicity is good.
 - Activity measures such as trades (ticks)
 - Volume traded
 - Range (be careful with this one)



The Three Timeframe Plan

- Trading Timeframe
 - Main focus timeframe
 - It does not change
- Higher Timeframe (HTF)
 - Usually used for context
 - Market structure
 - S&R levels
- Lower Timeframe (LTF)
 - Precisely time entries
 - Monitor patterns as they unfold



Timeframe Scaling

- Timeframes usually are related to each other by a factor of 3 to 5.
 - There is nothing magical about this, but it's just common sense.
 - Less than 3 adds little new information.
 - More than 5 usually omits information.
- Timeframes scale by the relationship of the square root of the ratio of the timeframes' periods.



Scaling Between Timeframes

- Scaling factor = $\sqrt{\text{length}_{\text{tf1}} / \text{length}_{\text{tf2}}}$
- Also applies to volatility measures such as range, target size, stop size, etc.
- Example: You are trading a system with 1.5 point stops on a 5 minute chart and want to scale it to hourly charts.
 - Scaling factor = $\sqrt{60 / 5} = 3.464$
 - New stops = 5.2



Multiple Timeframe Analysis

- Using more than one timeframe to analyze market patterns.
- Can be done explicitly, on multiple charts of different timeframes...
- Or implicitly, looking at structures from multiple timeframes on a single chart.
- (Most of the literature focuses on and assumes multiple charts.)



Why Use Multiple Timeframes?

- Patterns can become more powerful and more reliable when placed in multiple timeframe context.
- Standard technical patterns appear in random data, so how do we separate those “random” patterns from those driven by real supply/demand imbalance?
- Learning can be a problem because it is difficult to understand multiple timeframes without a firm grasp of one.
 - But patterns can become more powerful when placed in multiple timeframe context.



Some Common Misconceptions

- Our statistical work and quantitative analysis suggests that many commonly held beliefs regarding multiple timeframes are untrue:
- Higher timeframe patterns are more important.
 - **False.** Timeframes “pass control” and any timeframe can be the dominant timeframe at any time.
- Only trade when the higher timeframe is trending.
 - **False.** Many of the best lower timeframe trends come in higher timeframe consolidation.
 - **False.** Many of the best lower timeframe trades come at higher timeframe turns.
- Only trade with the higher timeframe trend.
 - **Questionable.** Trend indicators suffer from lag and put you on the wrong side of the market, statistically speaking.
 - Trades with the HTF trend do tend to work better, but trends do end, so it’s necessary to read trend structure.



Trend Indicator Statistics

Triple Moving Average Trend Indicator, Categorical Returns

	Equities	Futures	Forex	Random	Total
Down					
N=	365,690	12,372	4,204	14,621	396,887
Excess Ret	166.9	(203.0)	43.6	(74.9)	144.5
StDev Raw Returns	319.2	158.8	78.0	119.9	308.6
Mean HisVol	40.8	20.7	10.7	18.5	39.0
% Close Up	50.2%	49.8%	50.5%	50.9%	50.2%
Up					
N=	537,896	14,652	6,137	17,515	576,200
Excess Ret	(157.9)	80.7	(43.9)	98.6	(141.5)
StDev Raw Returns	217.6	152.3	66.4	114.6	212.7
Mean HisVol	30.2	20.2	9.6	17.2	29.4
% Close Up	49.9%	51.5%	51.7%	52.0%	50.0%
All					
N=	903,586	27,024	10,341	32,136	973,087
Raw Returns	2.0	1.3	1.9	1.4	2.0
StDev Raw Returns	263.5	155.3	71.3	117.0	256.2
Mean HisVol	34.5	20.4	10.1	17.8	33.3
% Close Up	50.0%	50.7%	51.2%	51.5%	50.1%



Concepts in MTF Analysis

- Understand the best (most reliable) patterns on a single timeframe. e.g.:
 - Mean reversion from climax areas
 - Failure tests at the extreme of a range
 - Interface between pullbacks and new trend leg
 - Drives to target areas (from pullbacks or breakouts)
- Then work to understand how timeframes interact and influence each other.



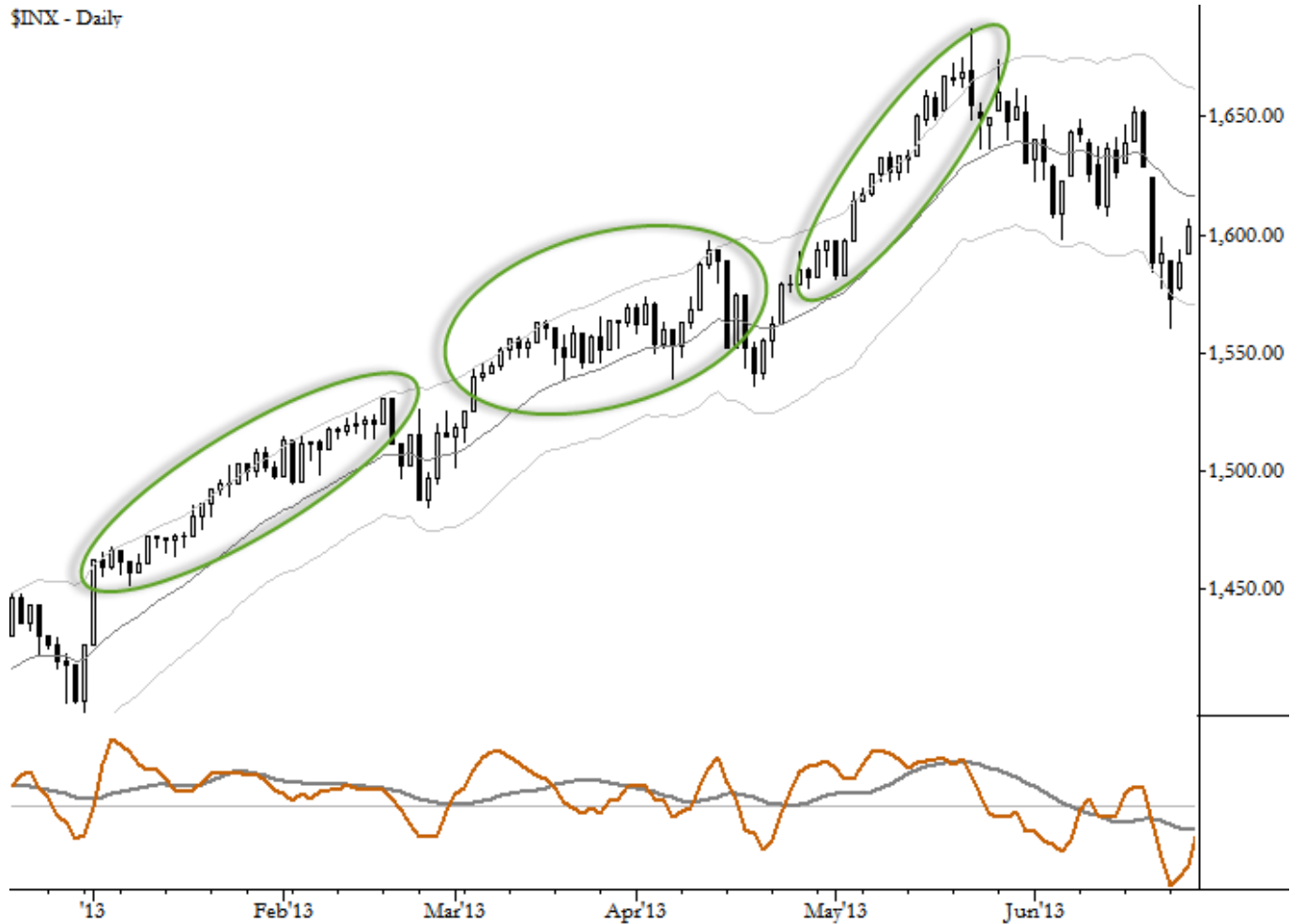
Possible Applications of MTF

- As actual trade entries with specific multiple timeframe conditions
- As a filter to skip trade entries
- Use awareness of HTF structures and levels for profit targets.
- Use LTF to monitor HTF patterns. Usually, failed moves on the HTF will fail via failure of LTF continuation patterns.



Using LTF Continuation Patterns to Monitor HTF Trends

\$INX - Daily



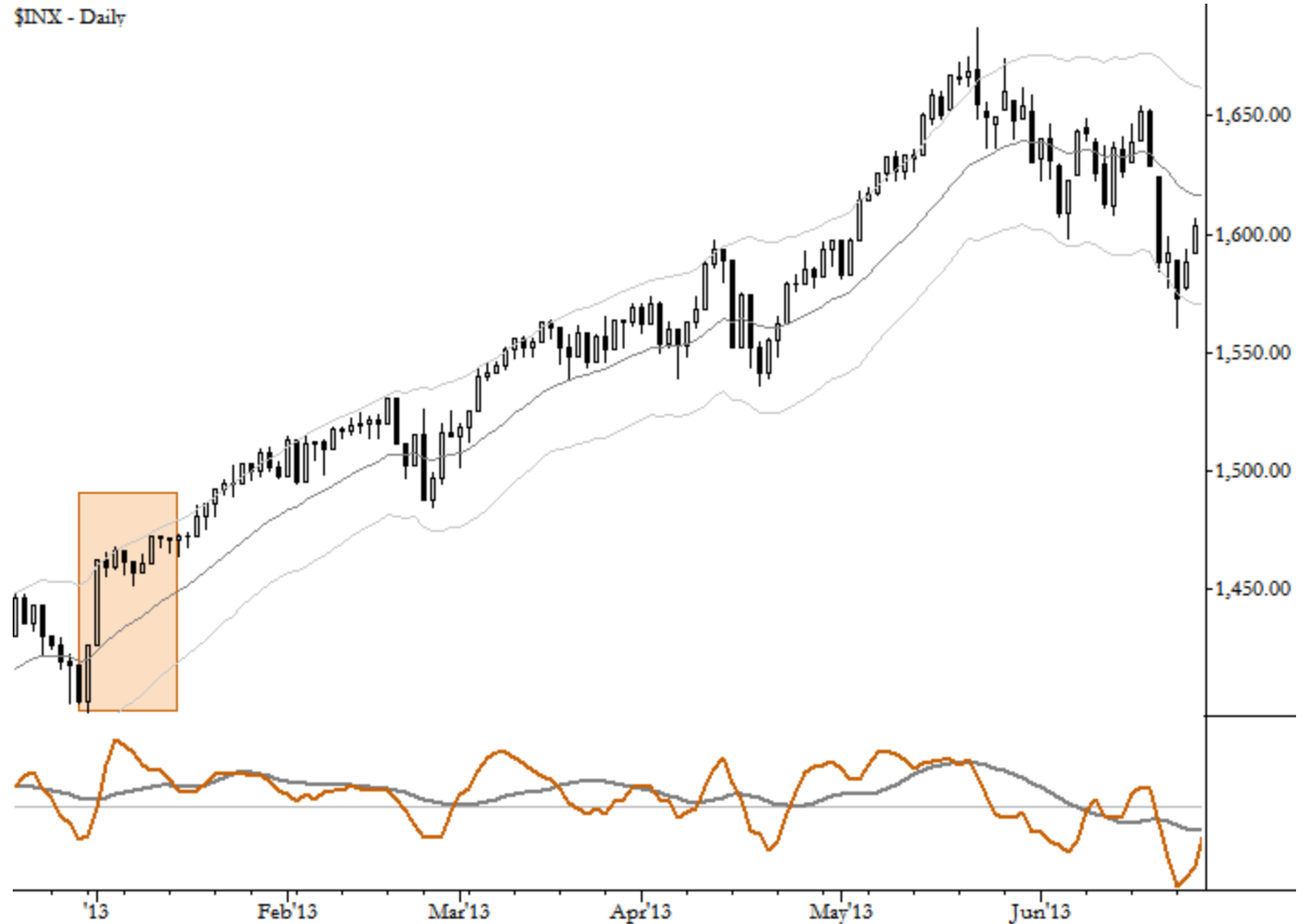
Review of Pullbacks

- Standard continuation pattern
- Typical pullback failure patterns:
 - Failure at previous swing
 - Failure by strong momentum against
 - Failure by sideways action
 - Failure that turns into a complex pullback.
 - Failure of failure
- The stronger and more over-extended the move, the larger the pullback typically is.

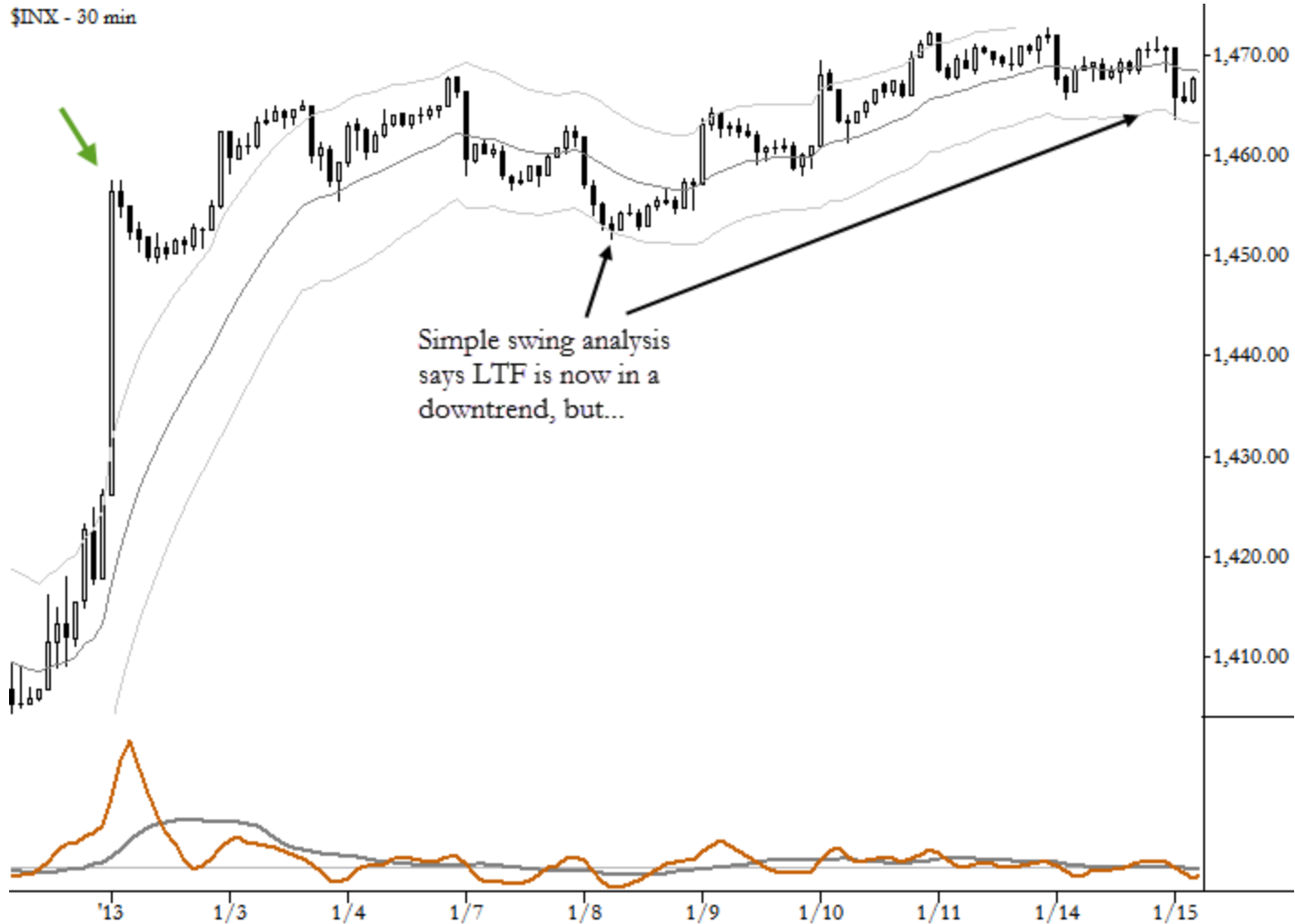


Early Trend

\$INX - Daily

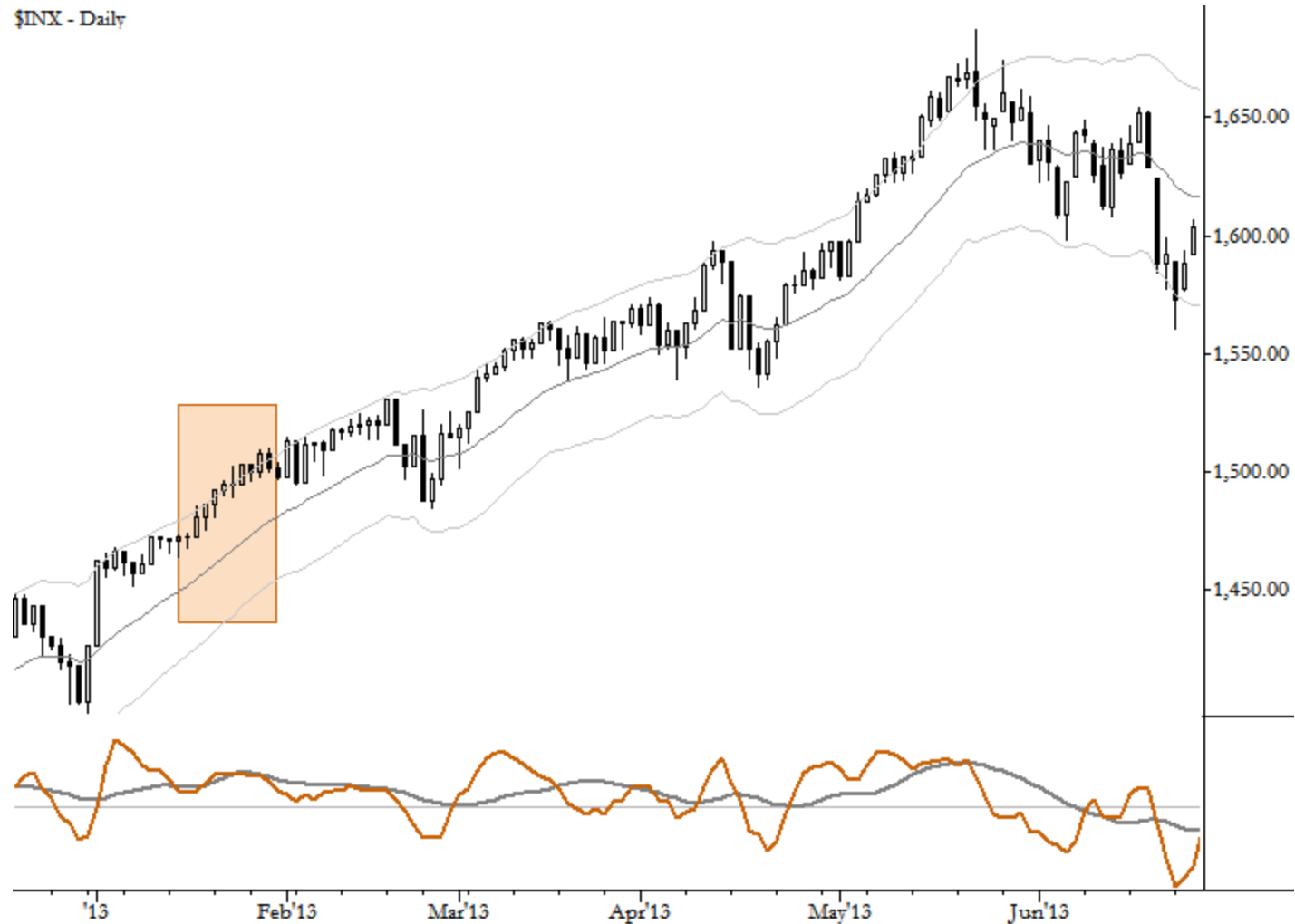


Working off LTF Overextension



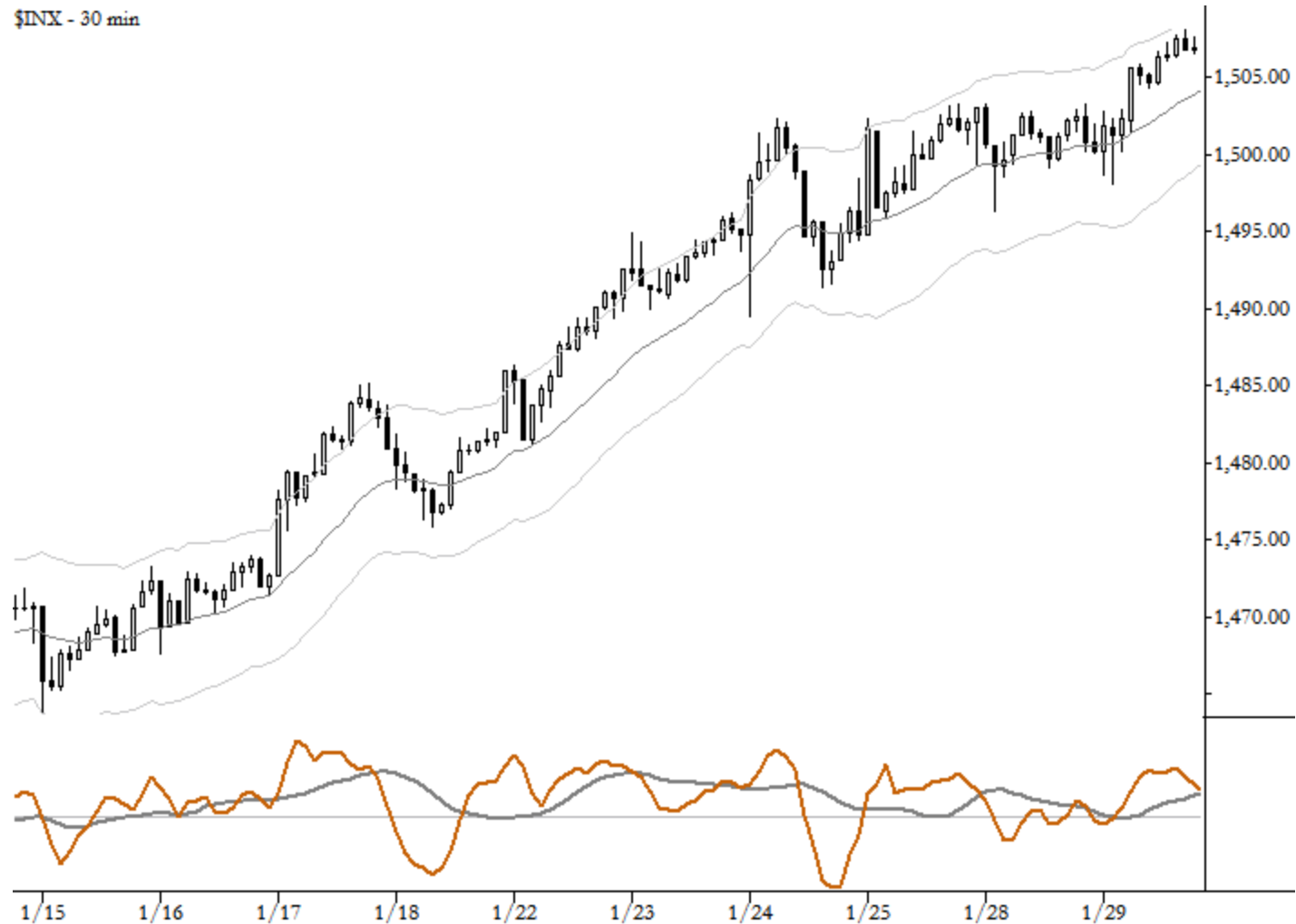
HTF Trend in Progress...

\$INX - Daily



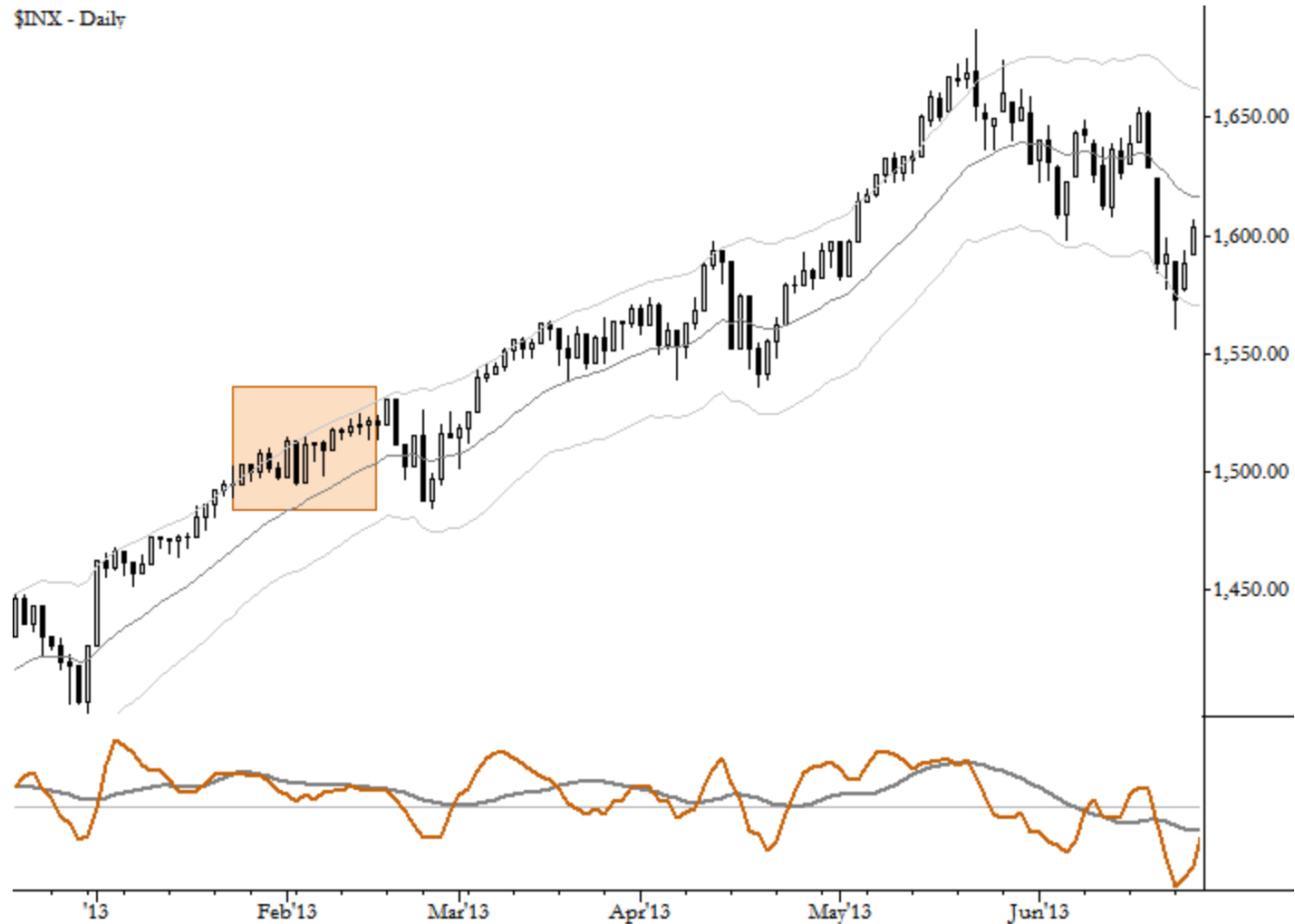
LTF Continuation Patterns

\$INX - 30 min

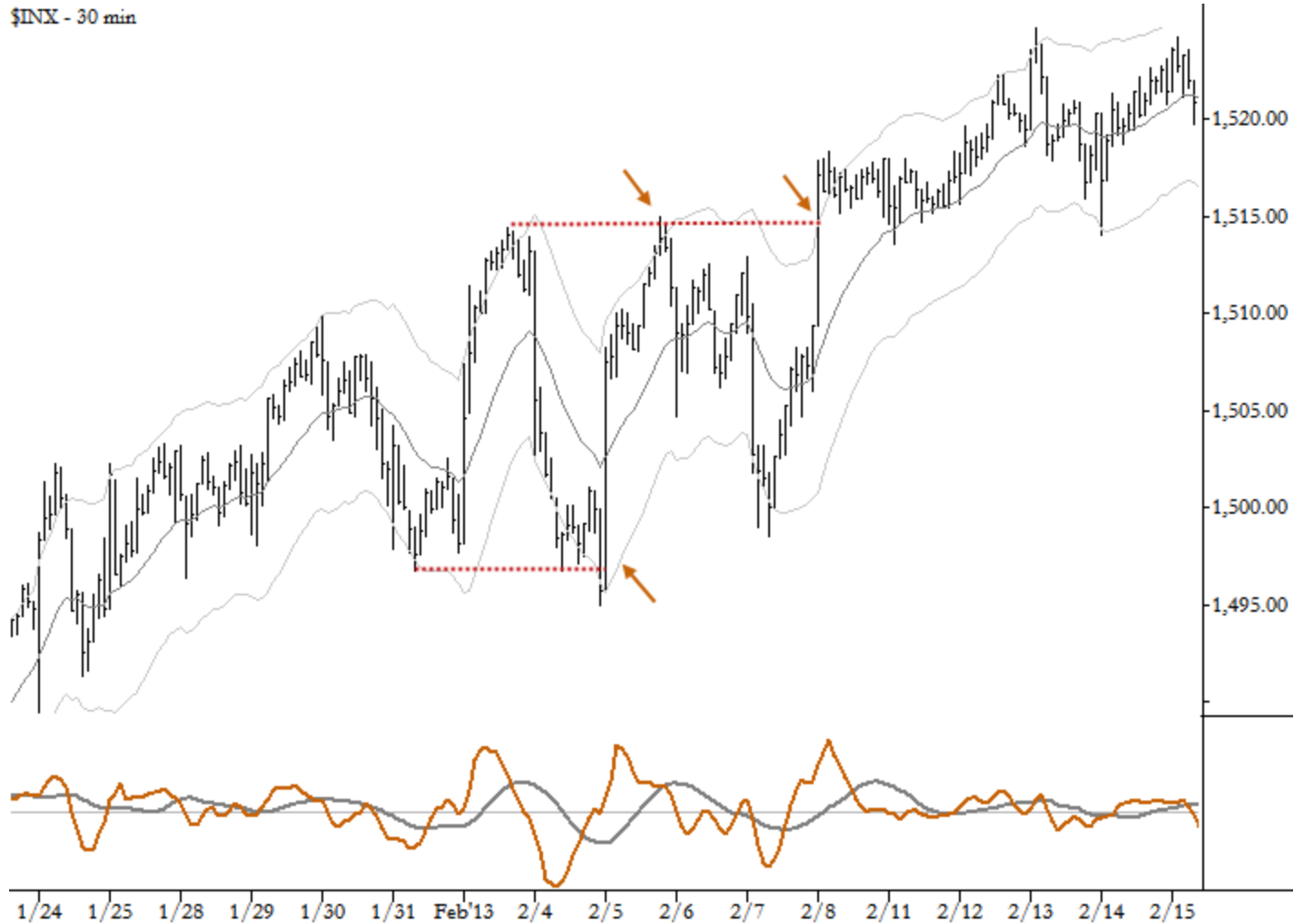


HTF Pauses...

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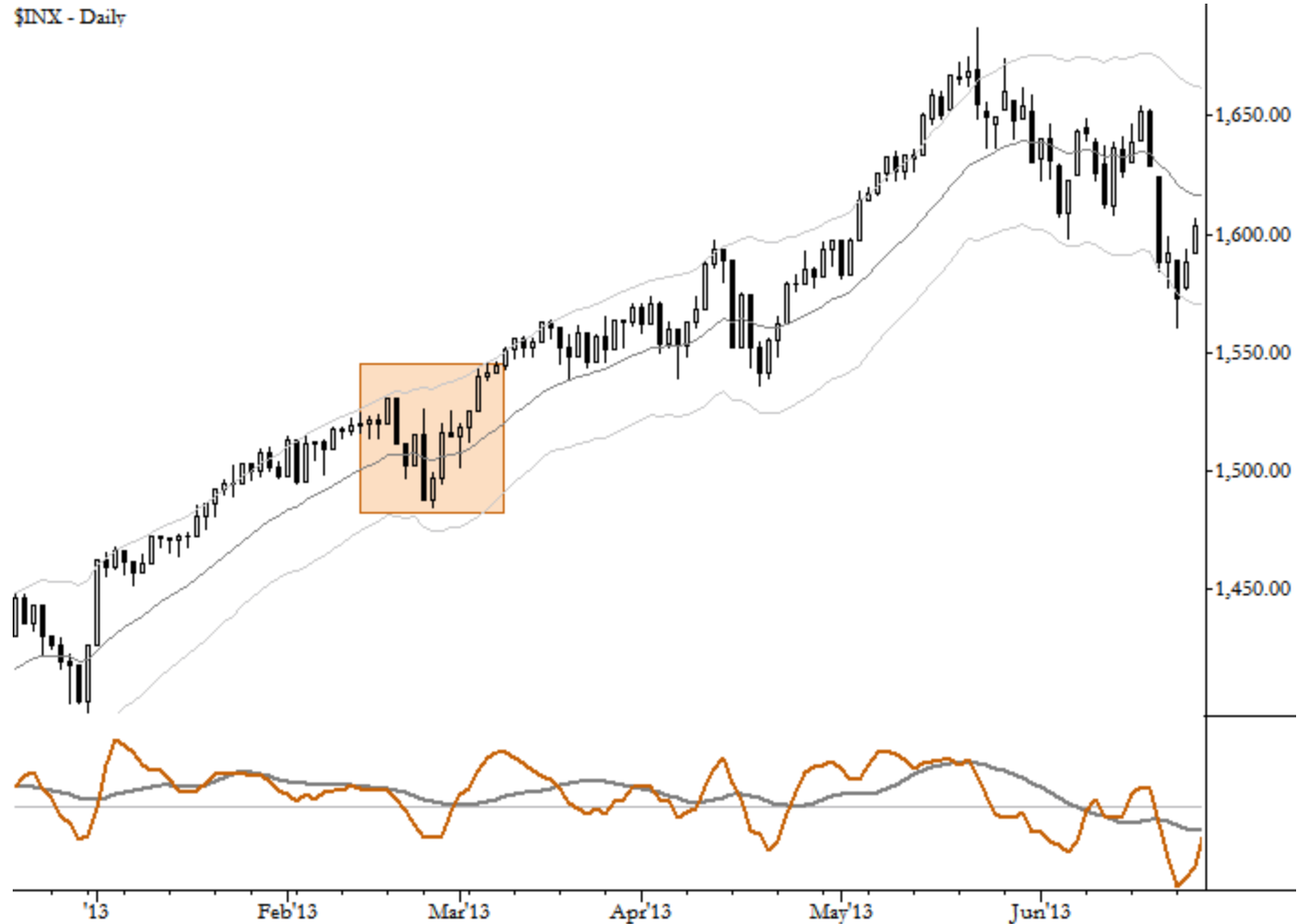


LTF Patterns Support HTF Consolidation



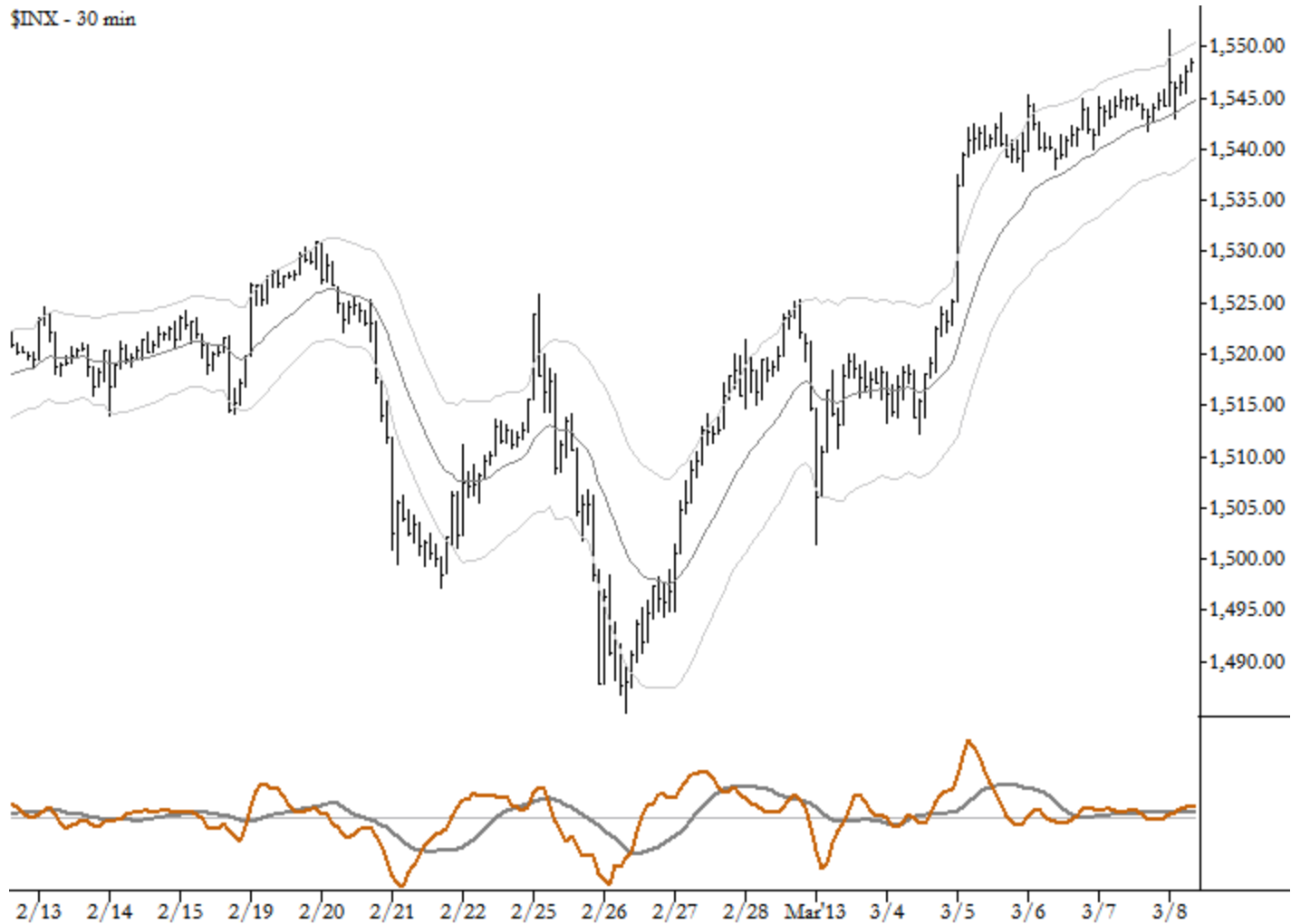
HTF Complex Pullback

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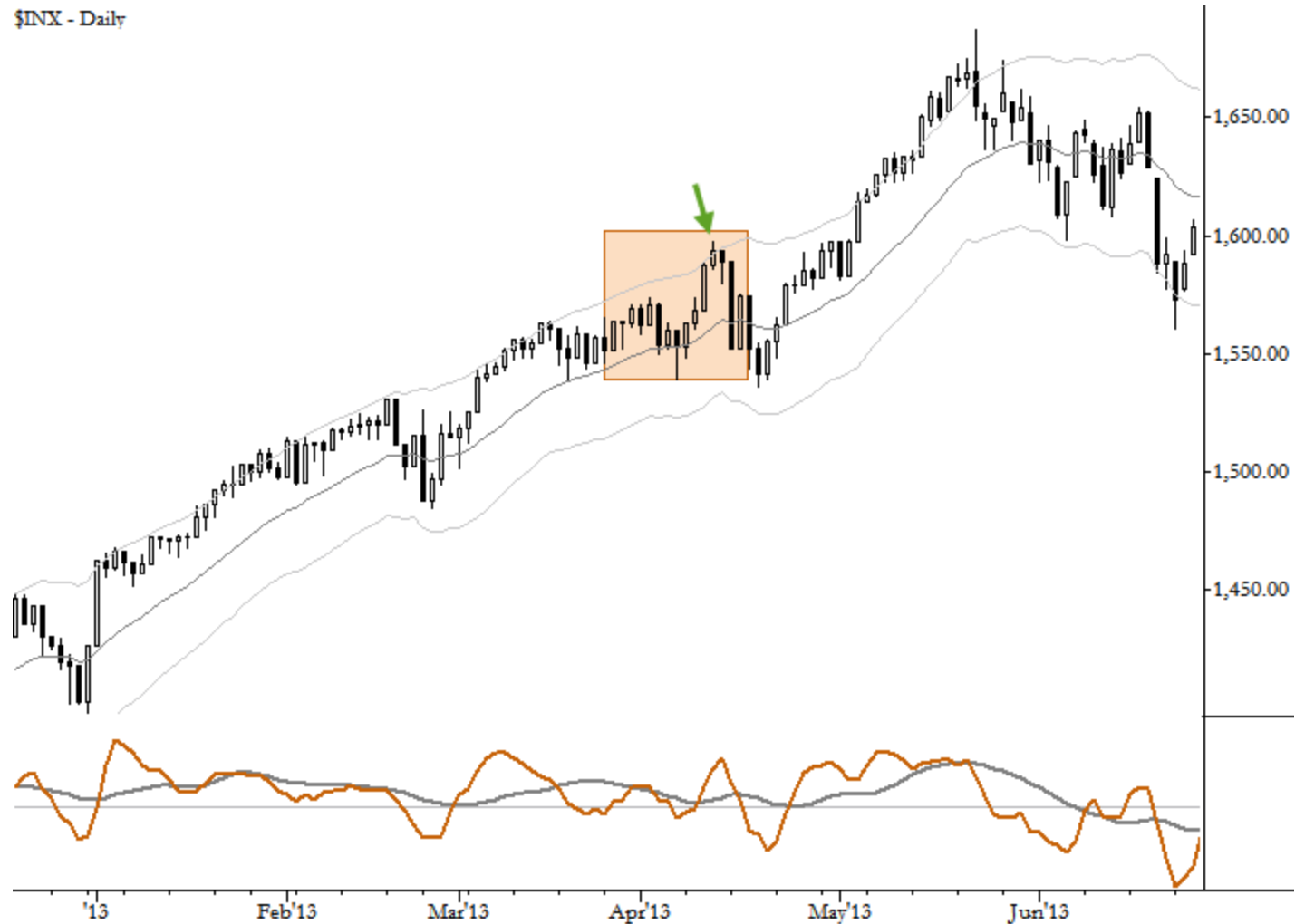
...Is a Violent LTF Downtrend

\$INX - 30 min



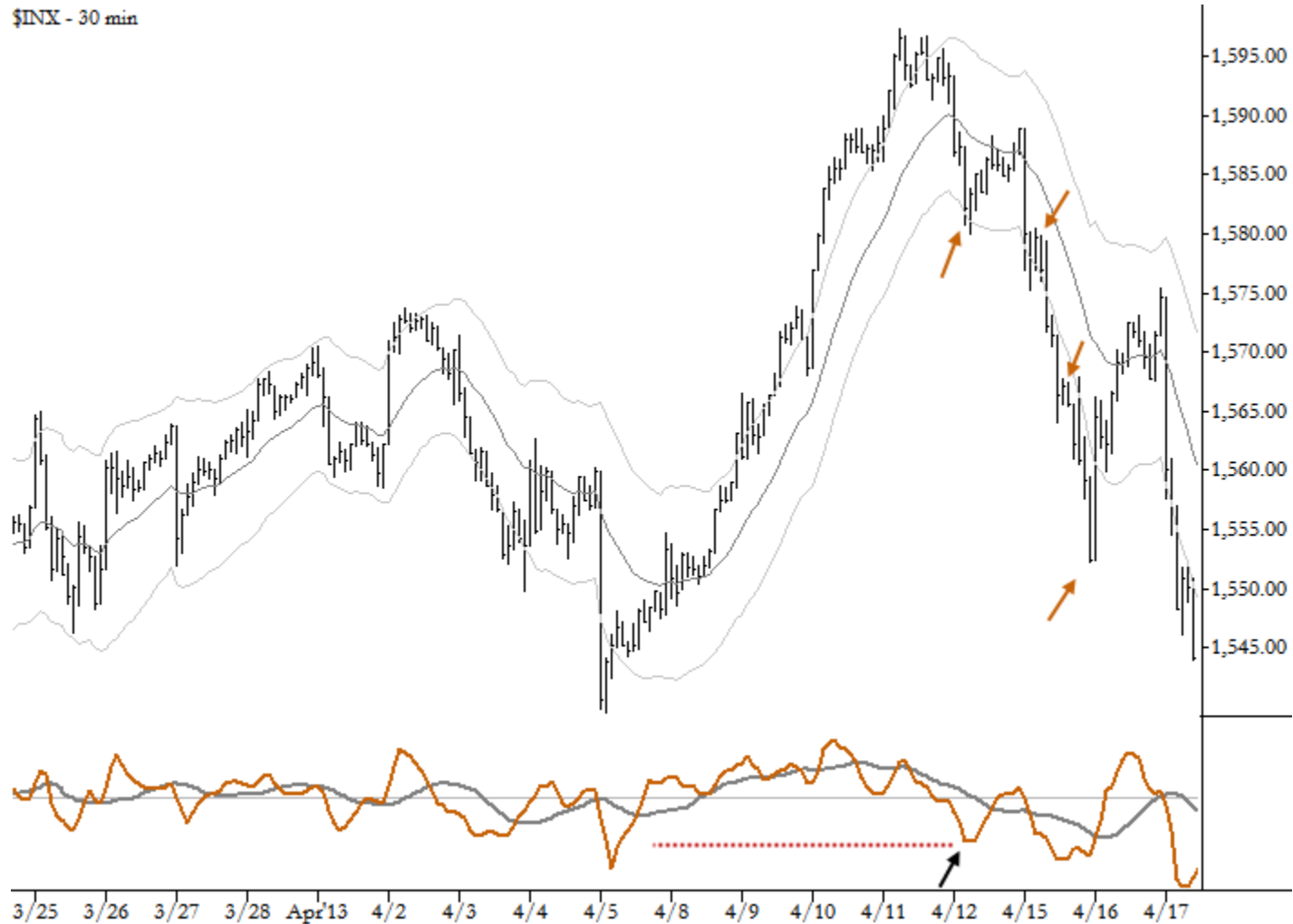
HTF Trend Leg Ends with Climax

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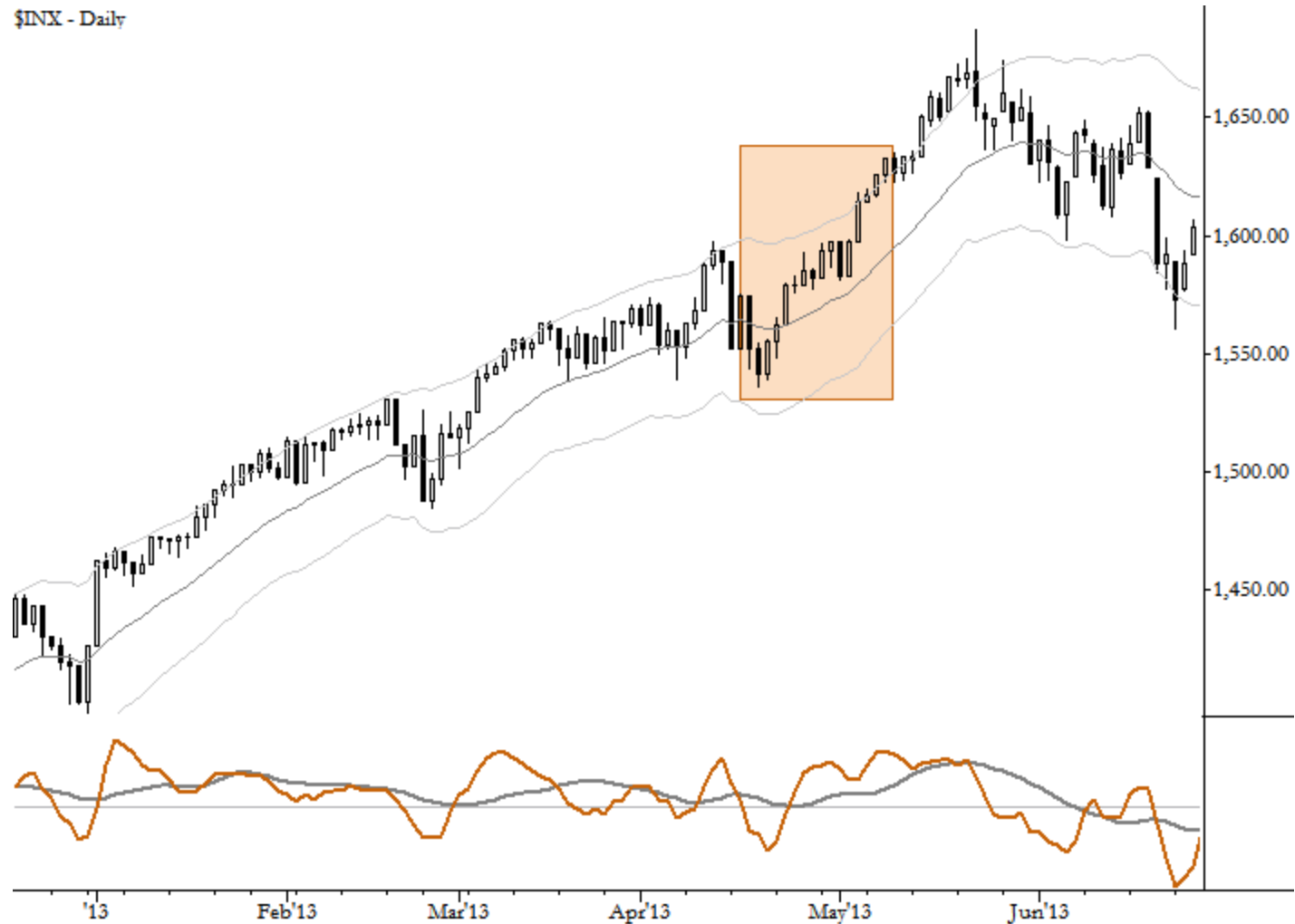
LTF Resolutions Clarify

\$INX - 30 min



HTF Trend Resumes

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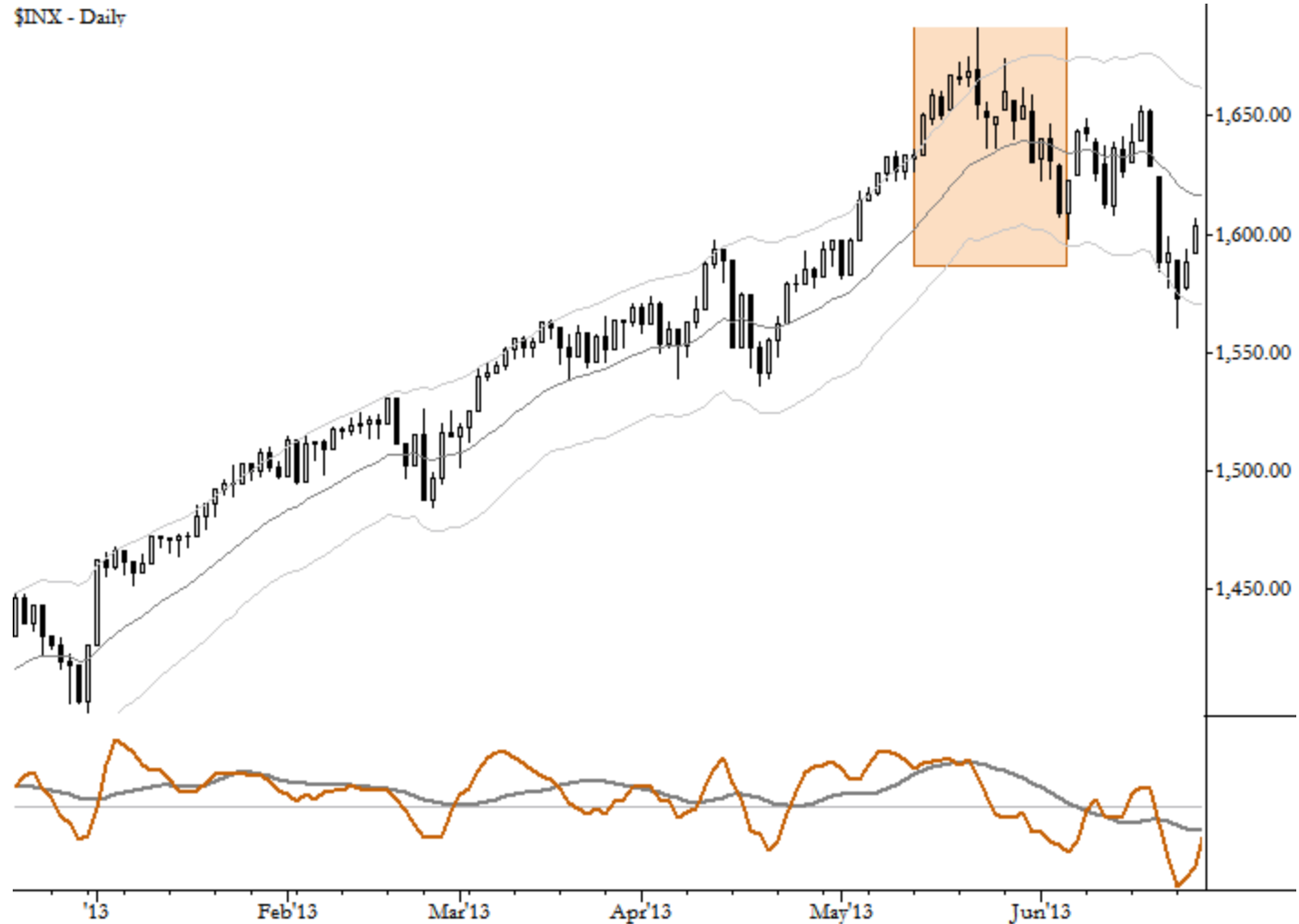
...Via Clear LTF Trend Reversal

\$INX - 30 min



More Serious HTF Climax

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...Reads as a Major LTF Reversal



Sometimes Candles Help

\$INX - 30 min

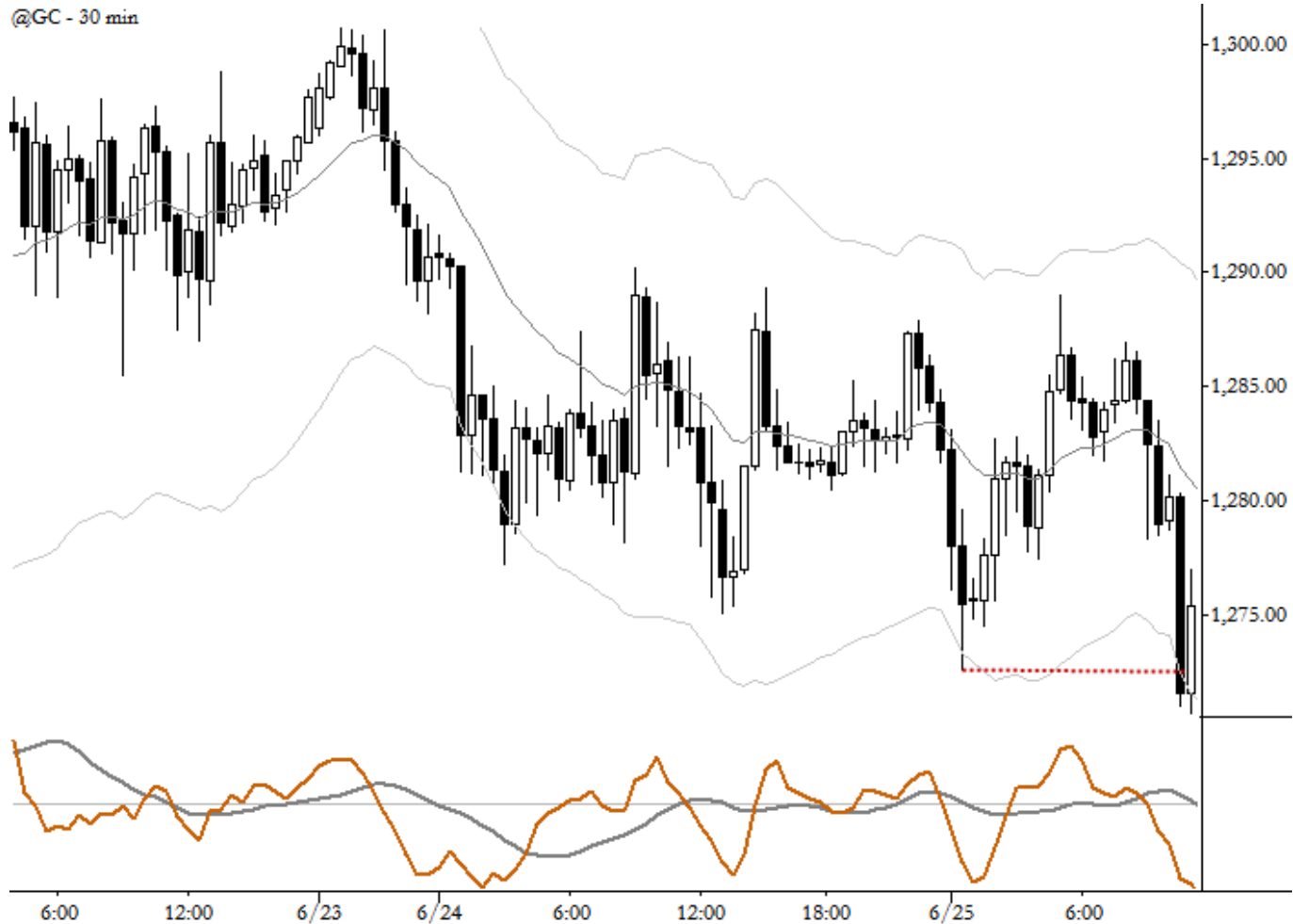


Using HTF as a Filter

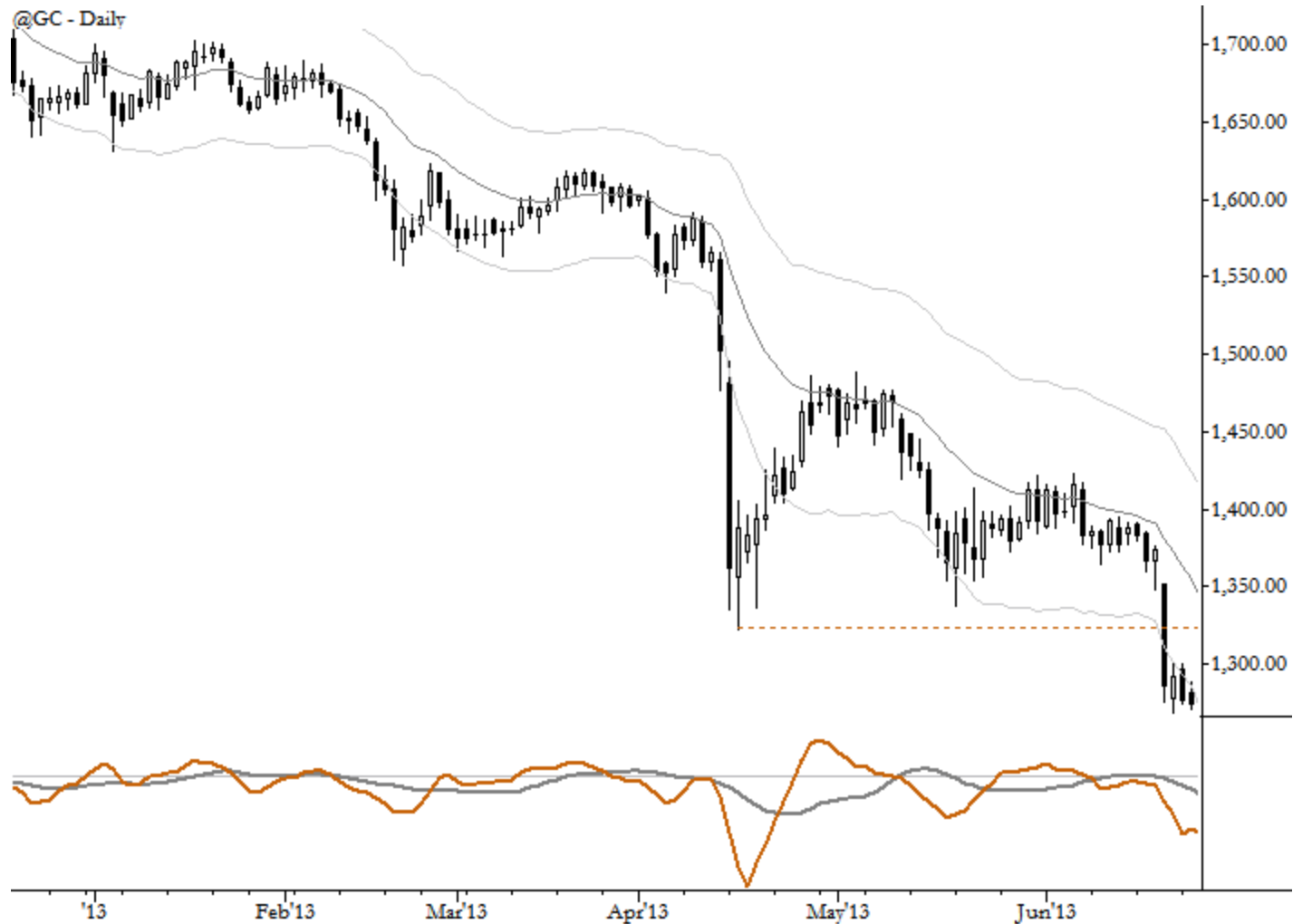
- Key concept: be careful of LTF trades against strong HTF tendencies.
- Why? Because it puts you on the wrong side of the market, statistically speaking.
- Best HTF tendencies in this case might be:
 - Pullbacks in strong trends
 - Failure tests
 - Climax patterns



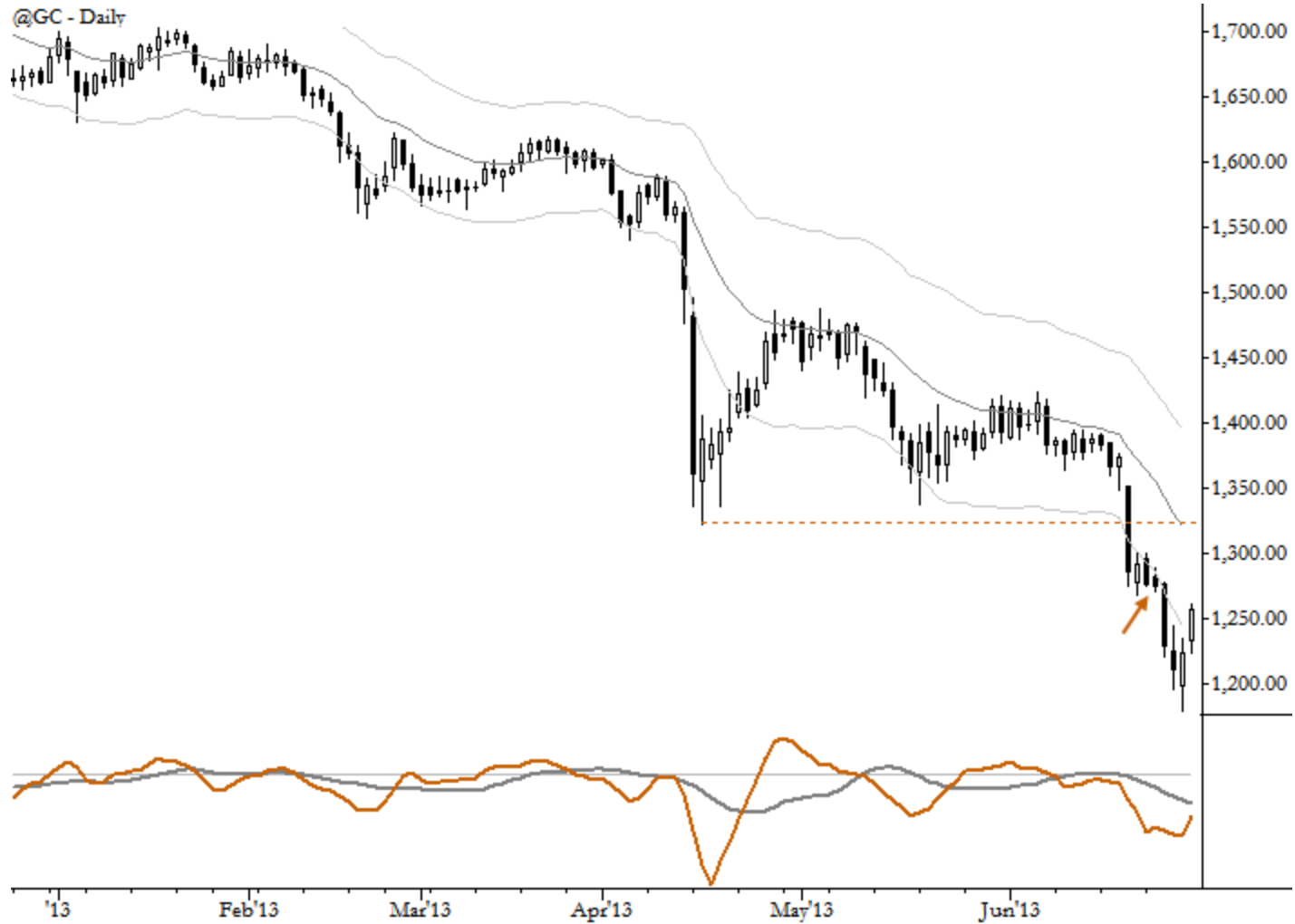
Do You Like This Failure Test Buy in Gold?



Does Context Matter?



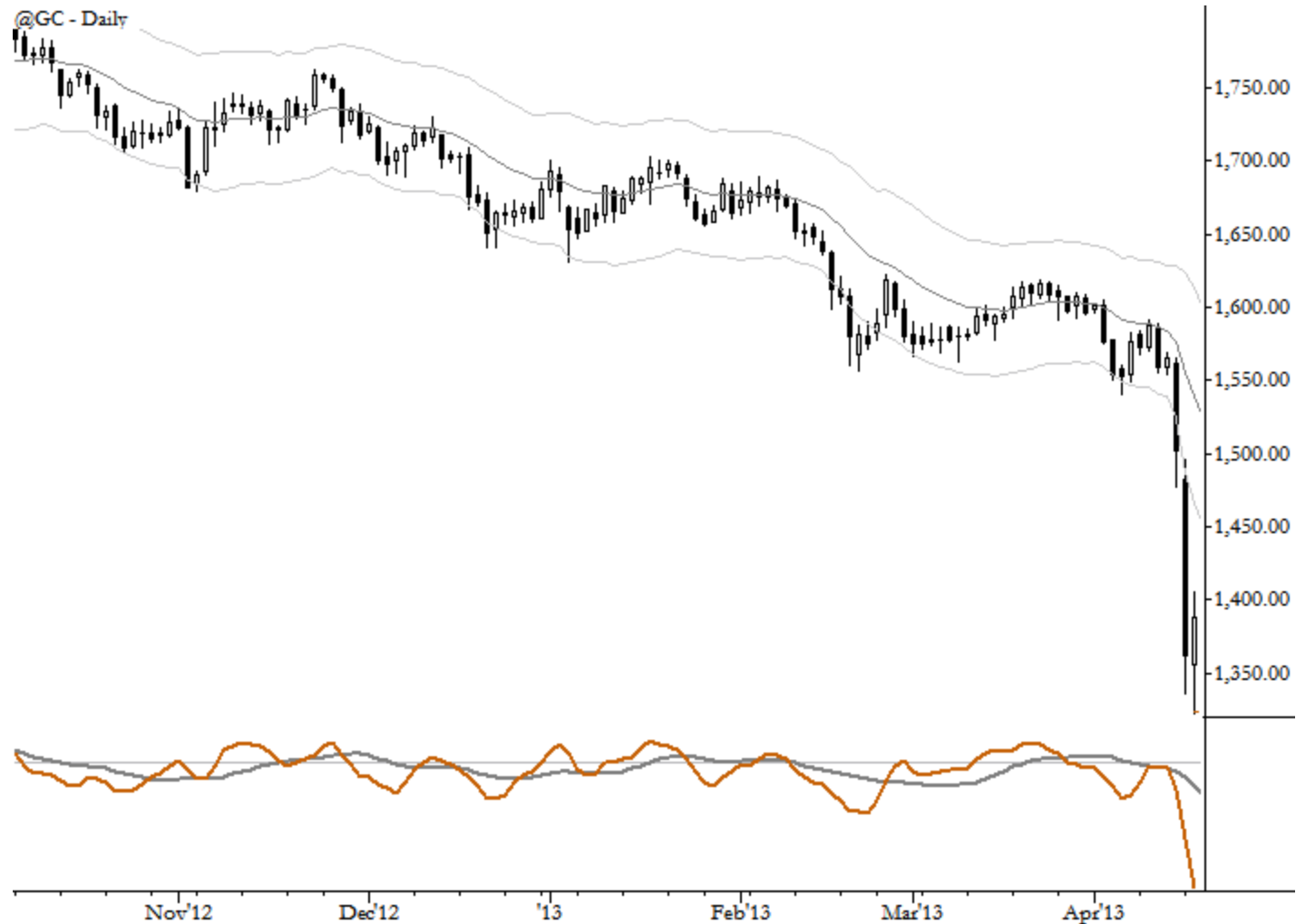
Yes



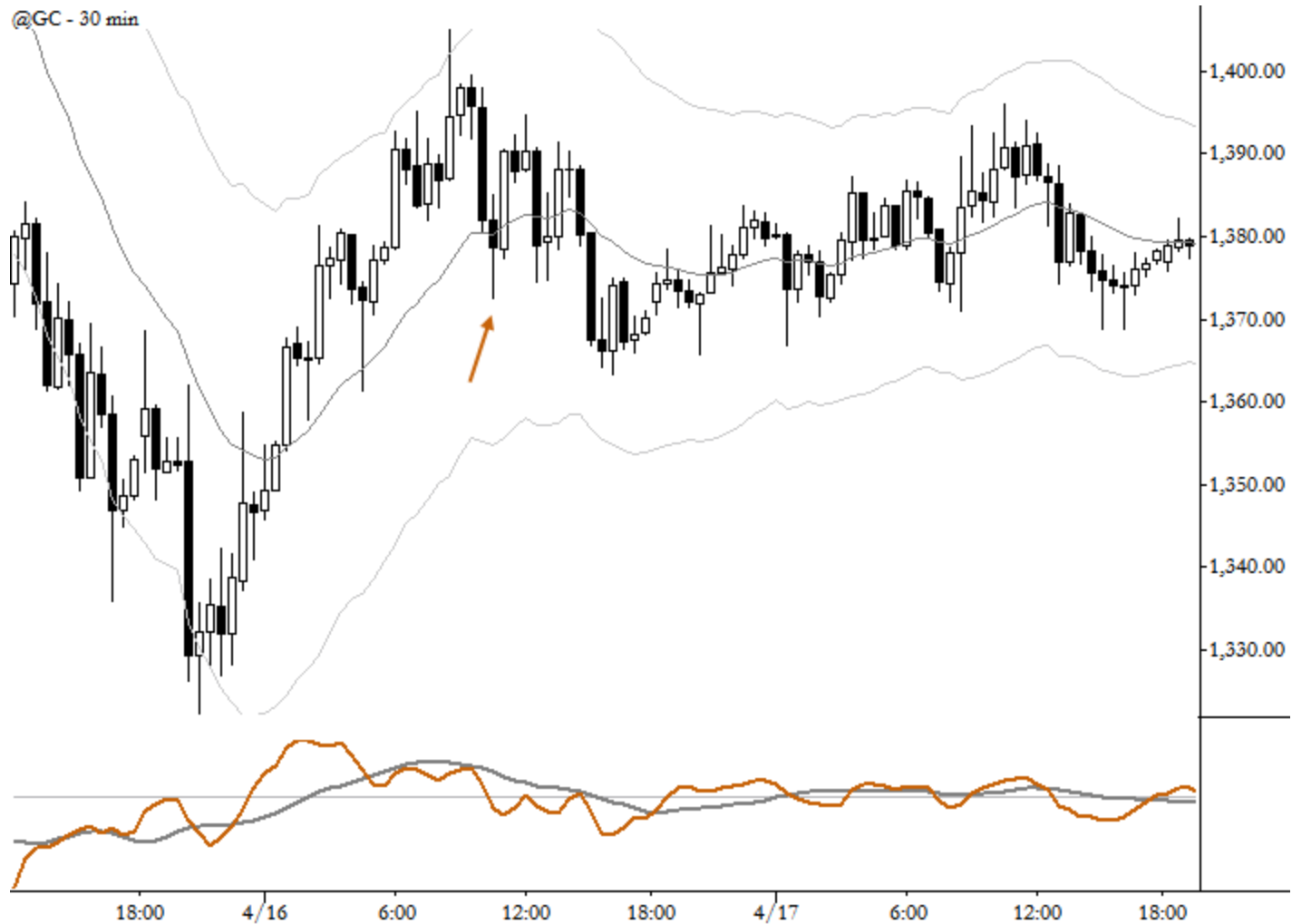
Short This Extended Pullback?



Difficult in HTF Climax



Not an Easy Trade



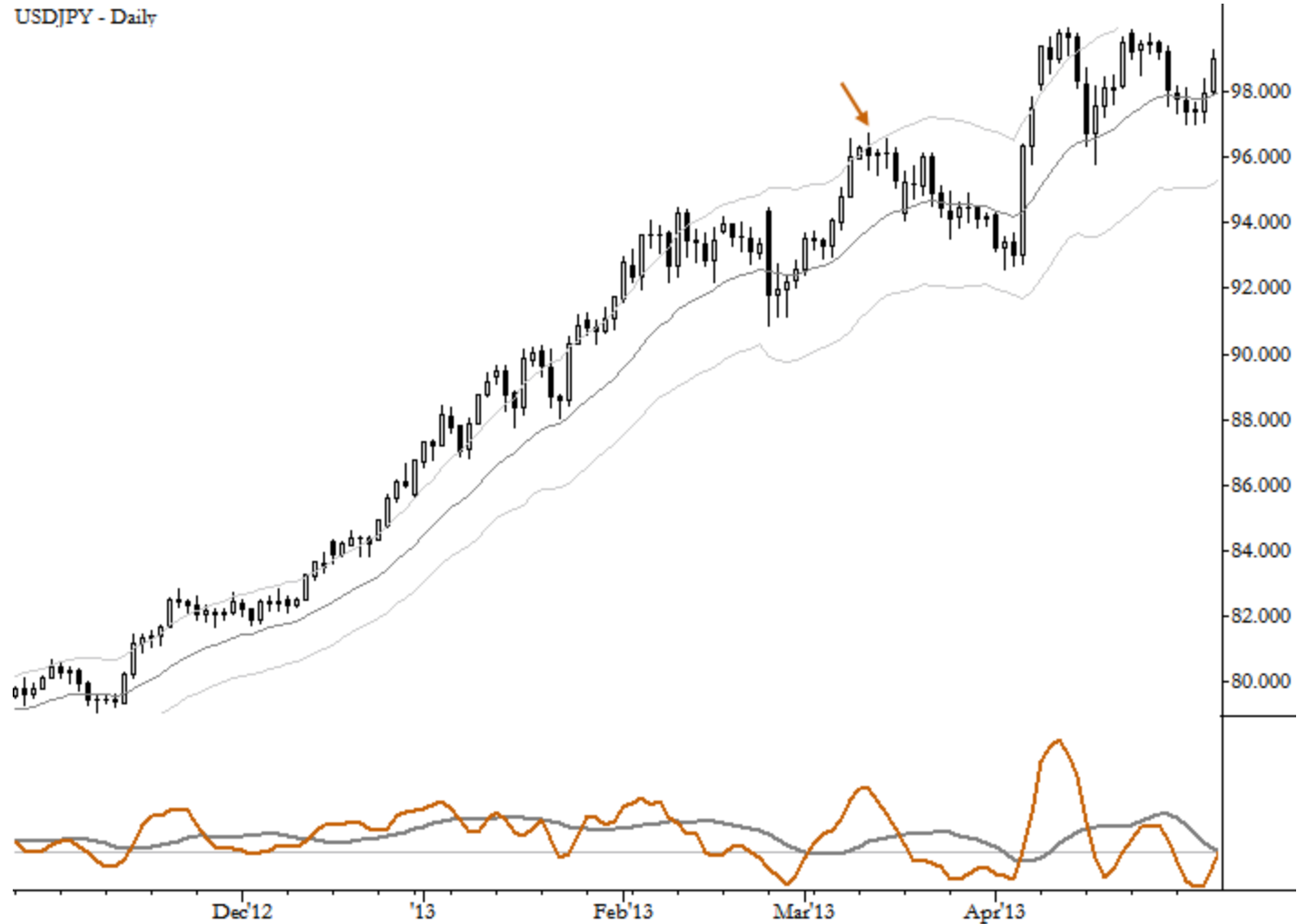
Timing Entries from LTF

- Many ways to do this, but here is one good example:
 - Look for HTF pullback (or flag)
 - Enter LTF failure tests in the direction of the flag's anticipated breakout.
 - Manage at least part of the trade from the LTF (with respect to profit targets.)
 - Use LTF stops.

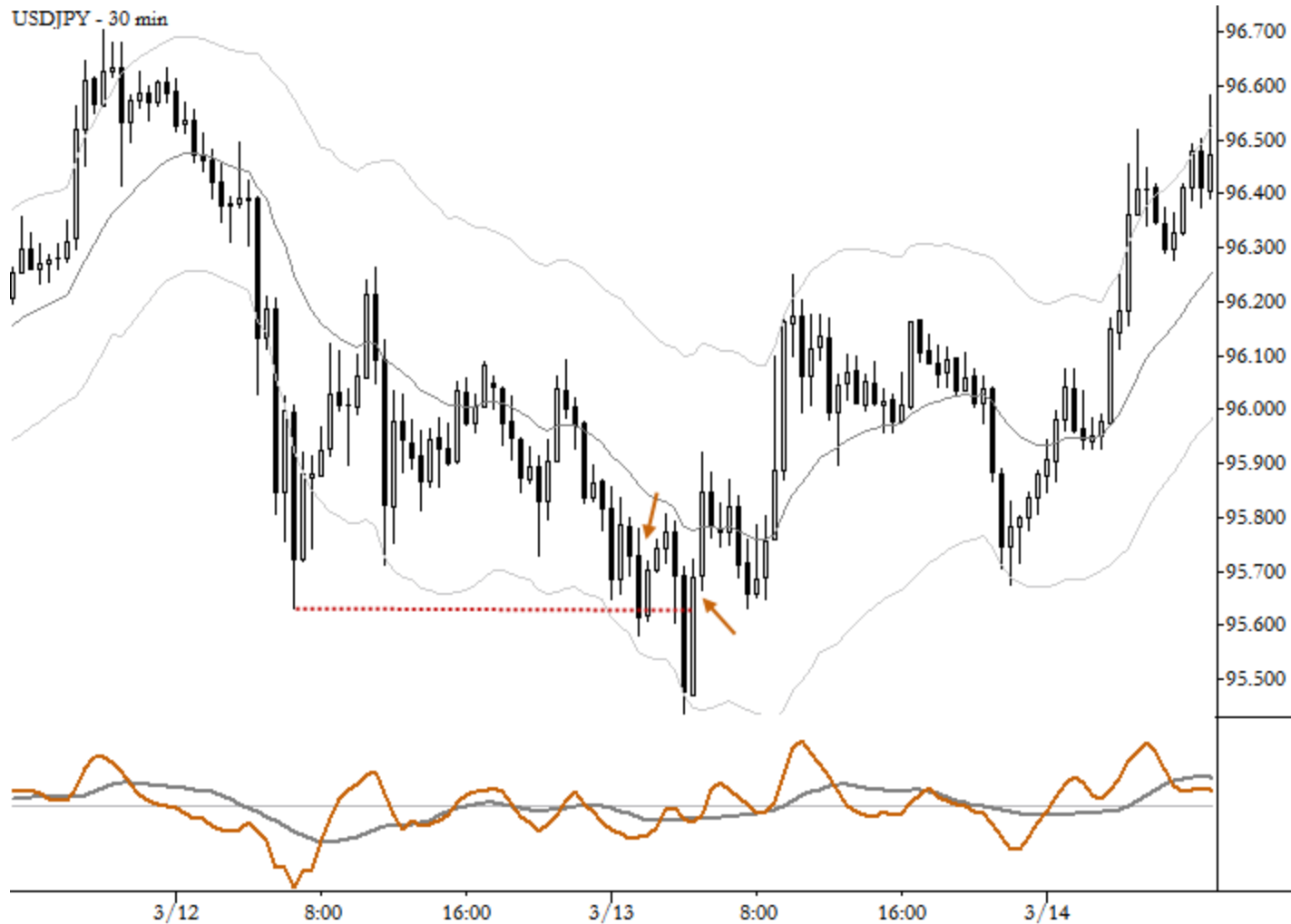


Assume We Want to Buy this Pullback

USDJPY - Daily

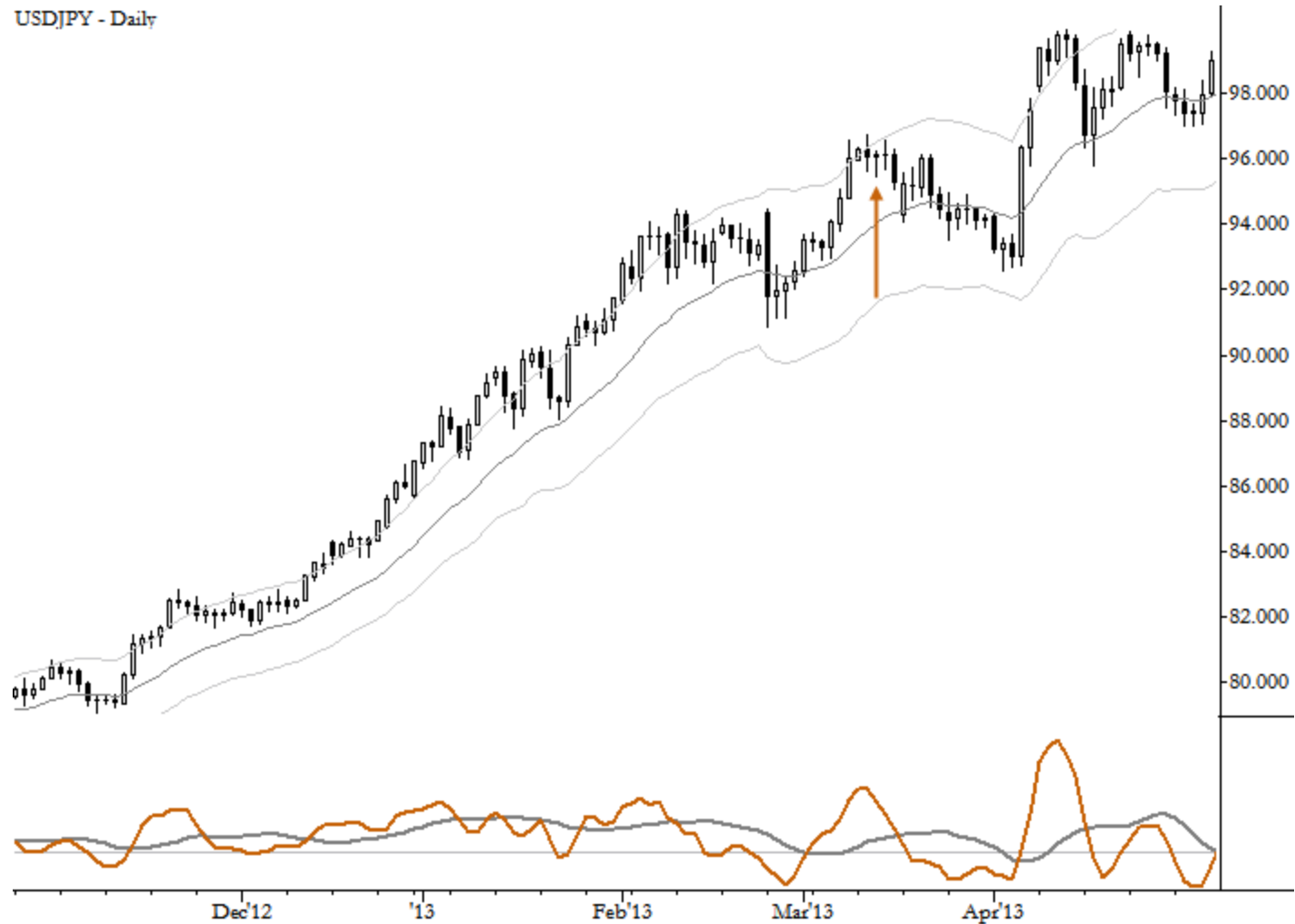


These Entries are Early

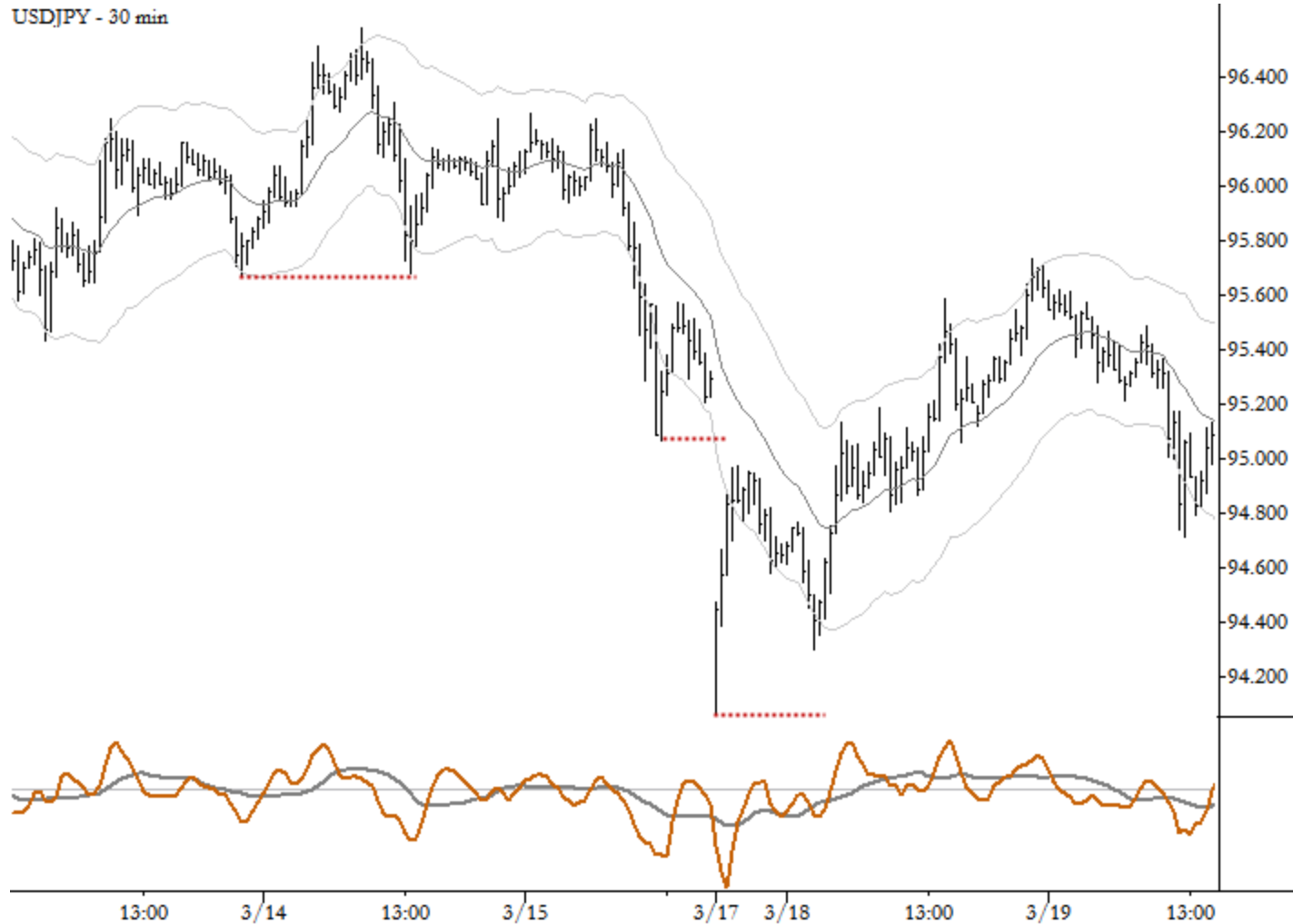


Bought Here: Very Early

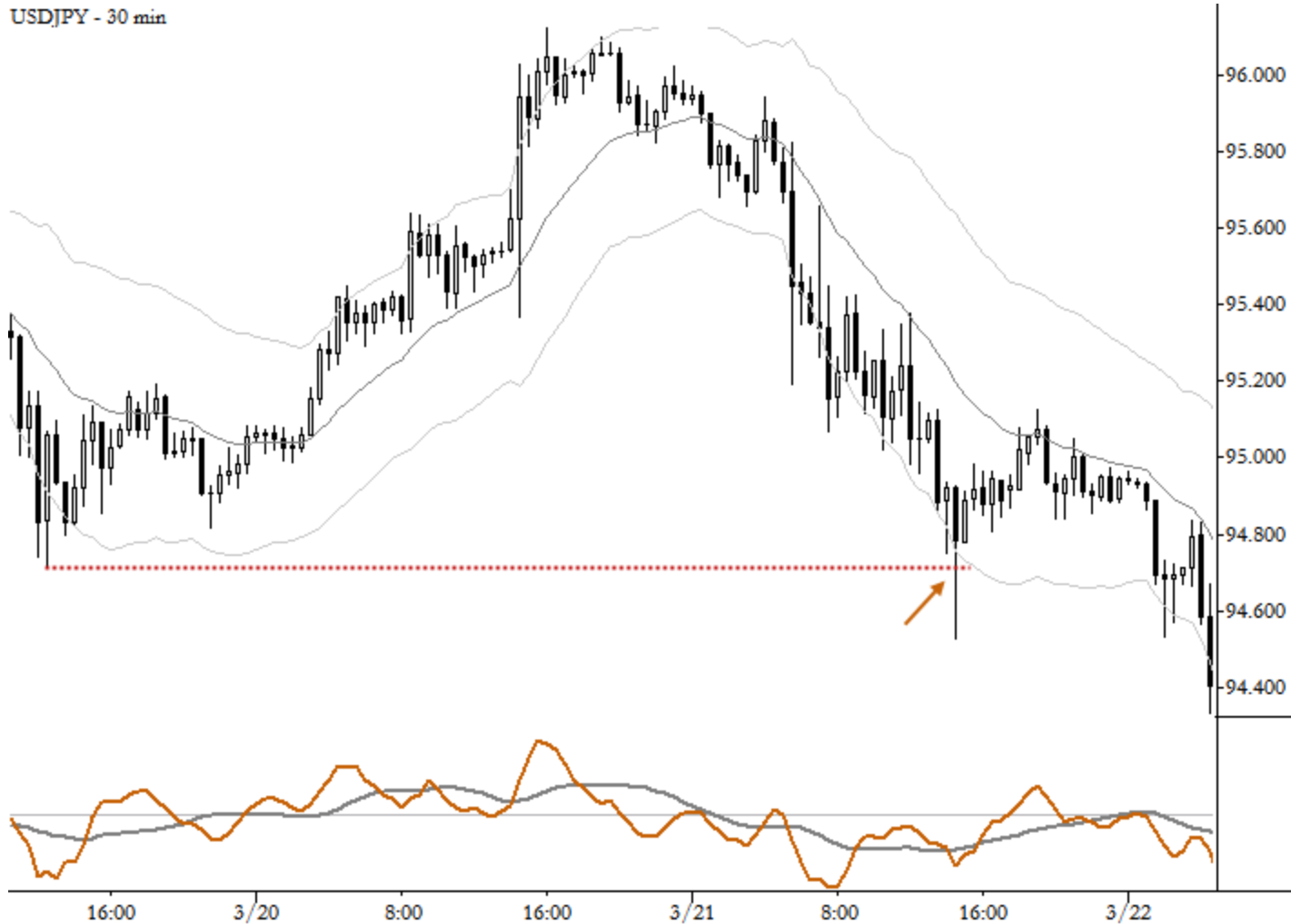
USDJPY - Daily



No Entries Here...

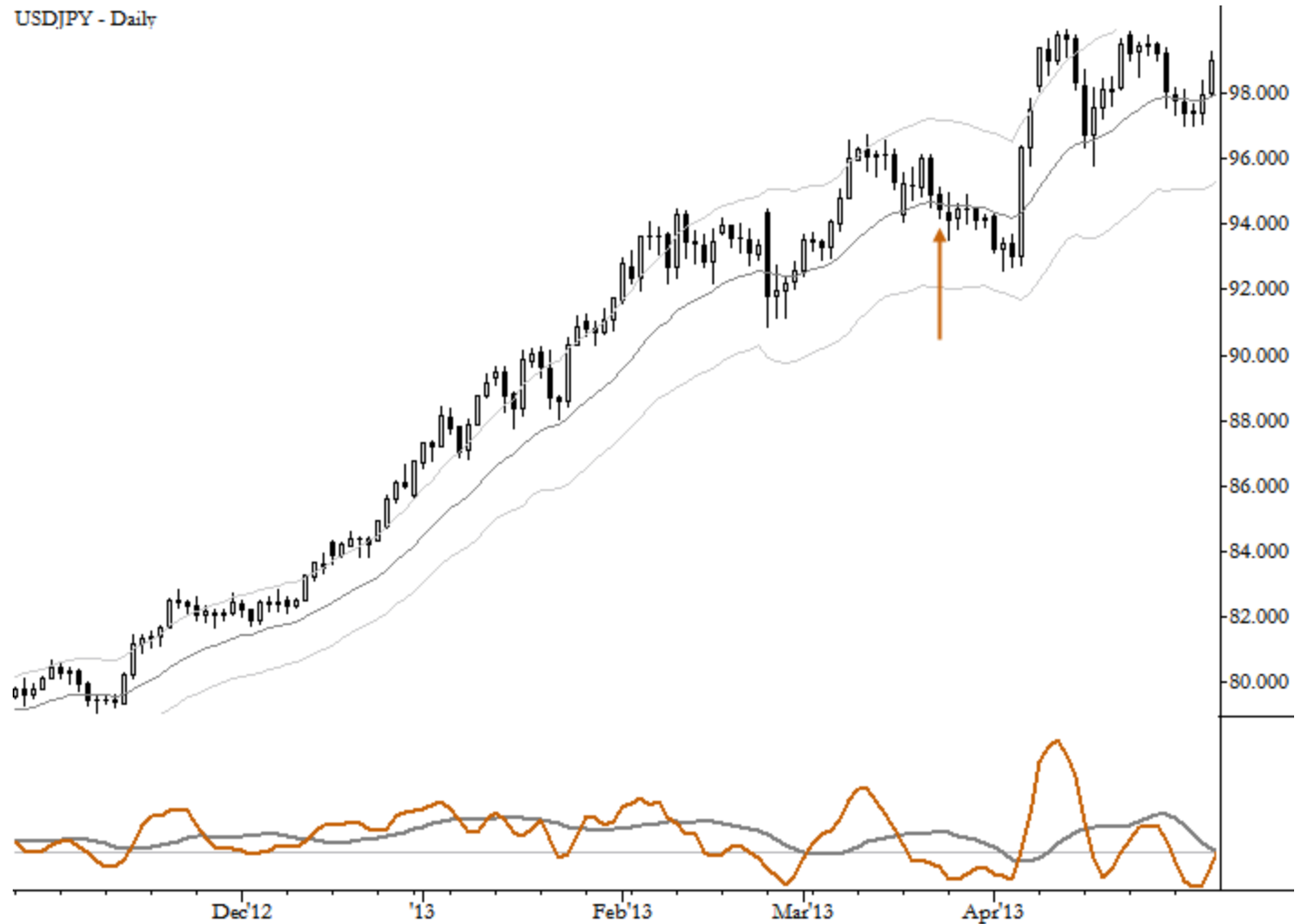


Another Possible Entry



Still Early

USDJPY - Daily



Toward an Intraday System

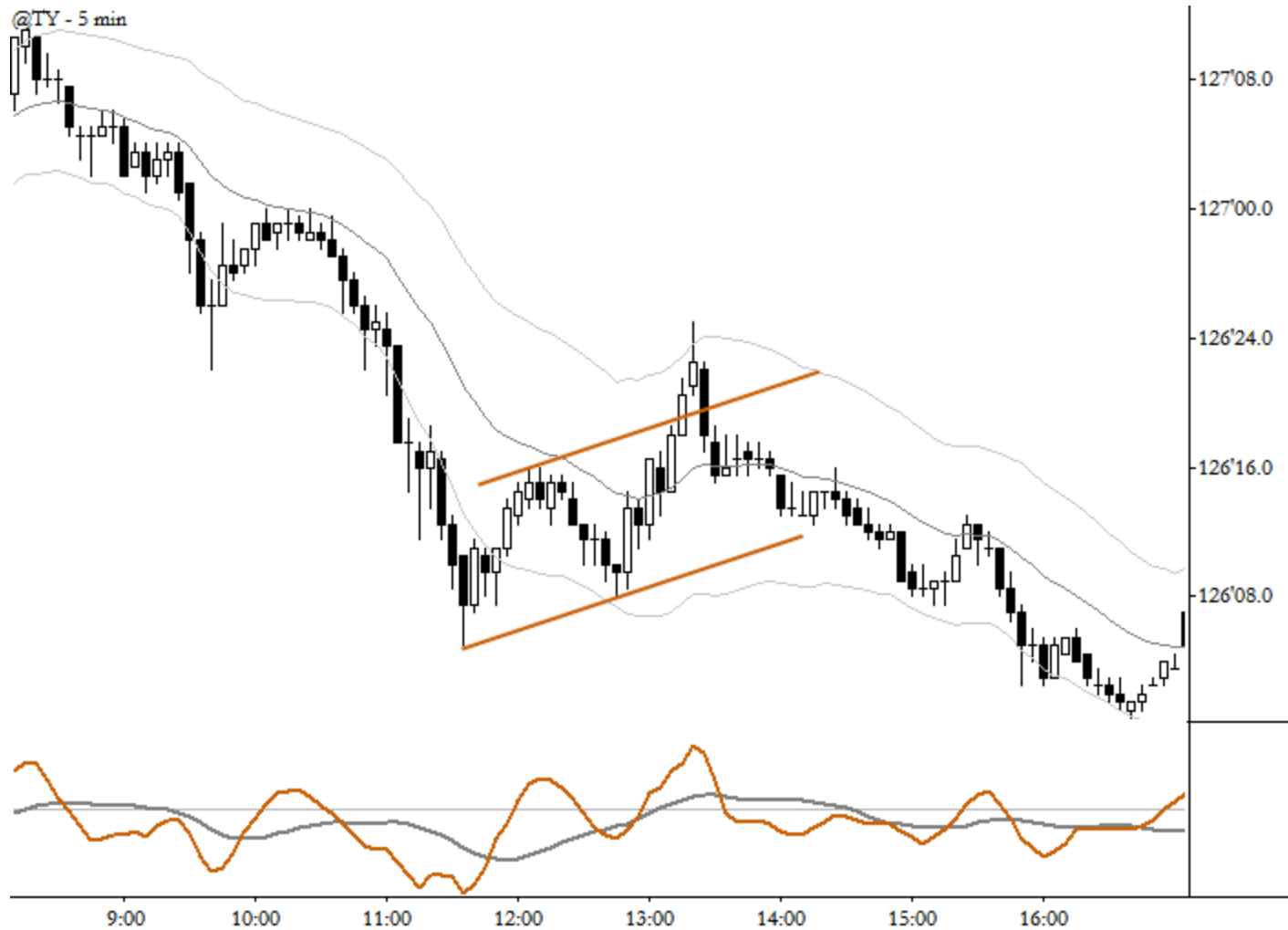
- Use 15-60 as TTF (Trading timeframe)
- Use a divisor of 3 to 5 to find LTF
 - E.g., 5/1, 15/5, 15/3, 60/15
- Look for good TTF pullbacks
 - Need to understand how to trade pullbacks!
- Trigger entry from LTF failure test
 - Need to understand how to trade failure tests.
 - May need some flexibility in defining the pattern.
- Use LTF risk, and manage at least part of the trade on the LTF.
- Be prepared to hand winning trades off to TTF.



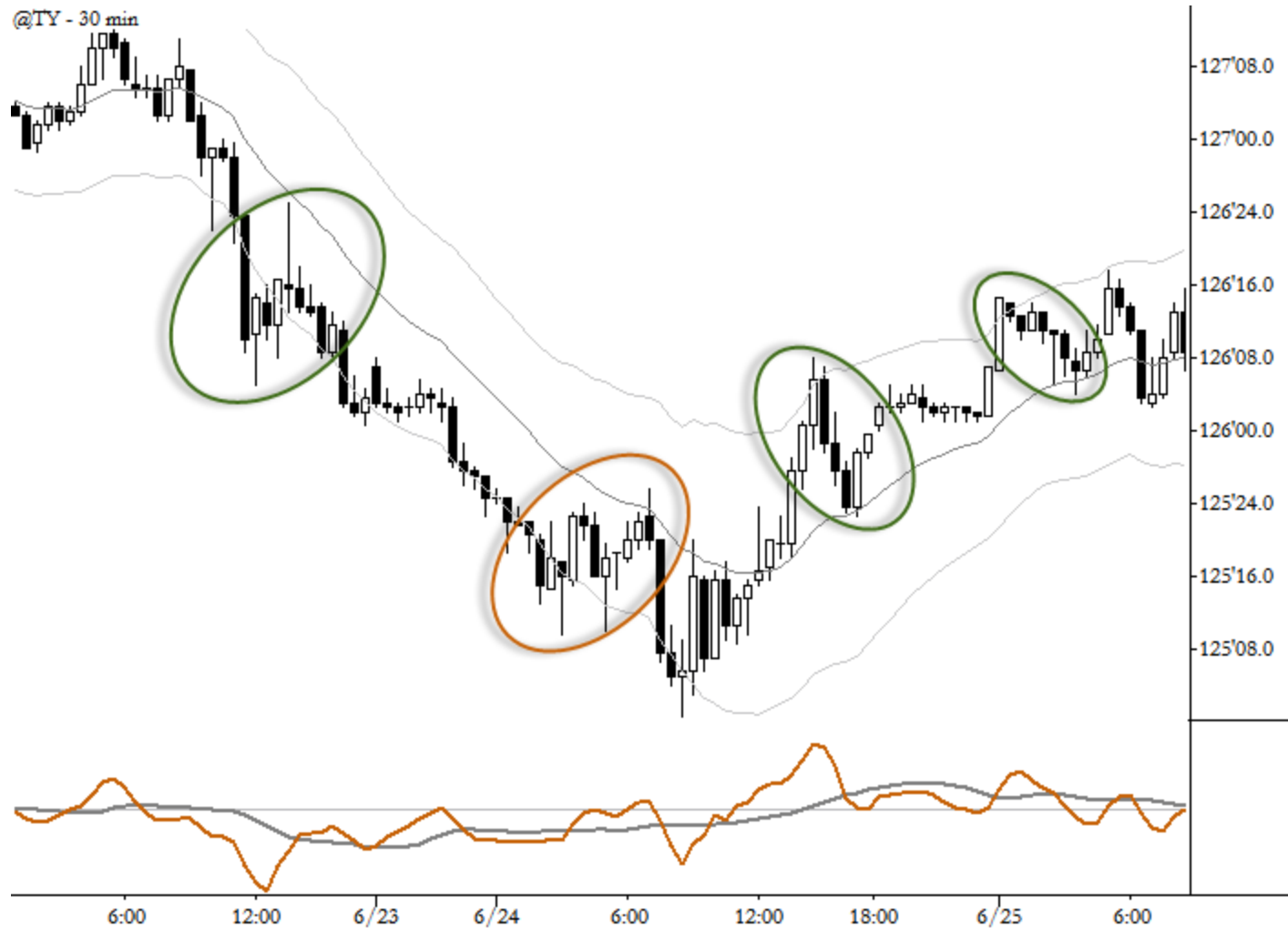
Intraday MTF on T-Note Futures



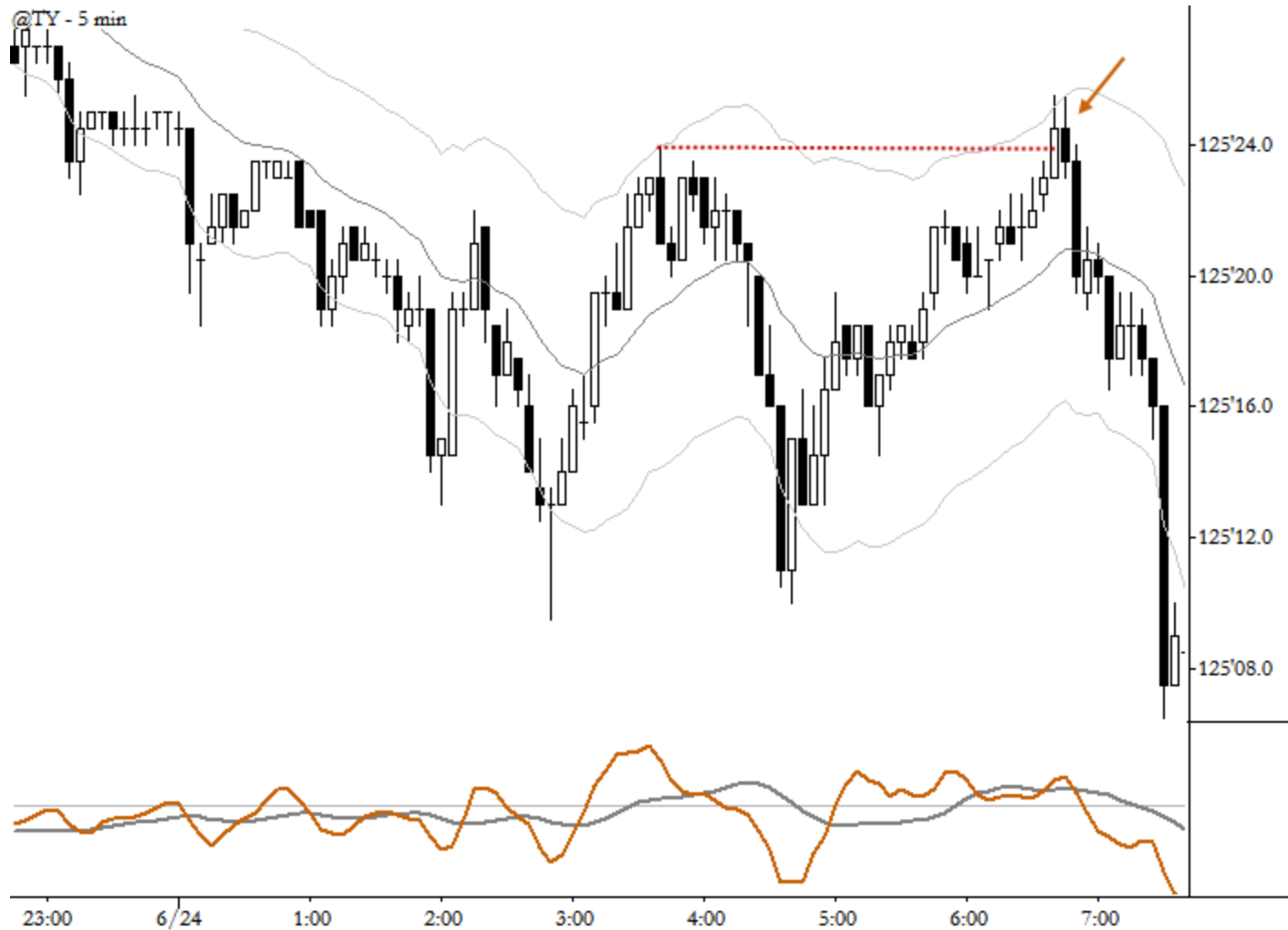
There is Not Always a LTF Entry



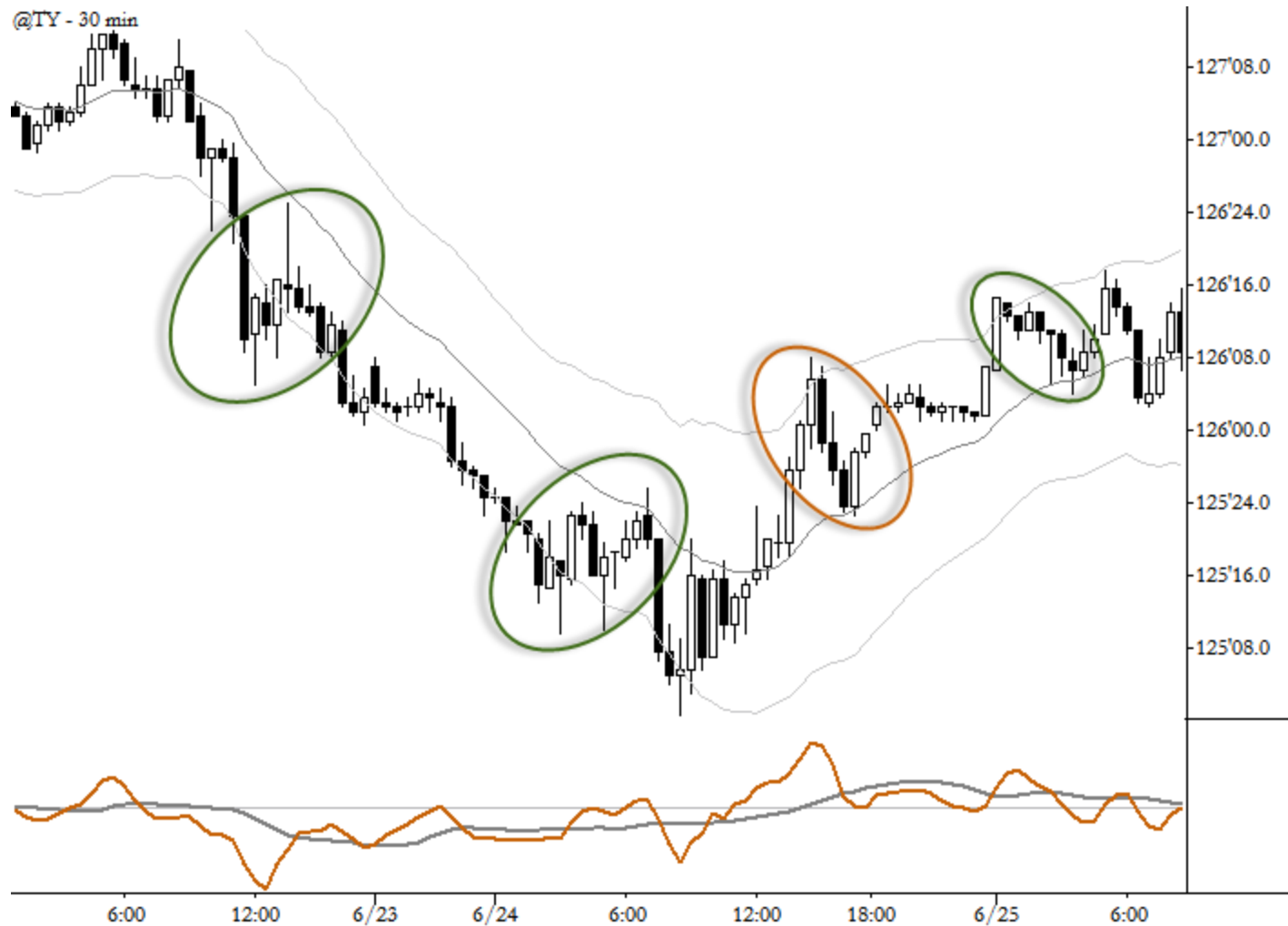
Extended Trend: Complex Consolidation



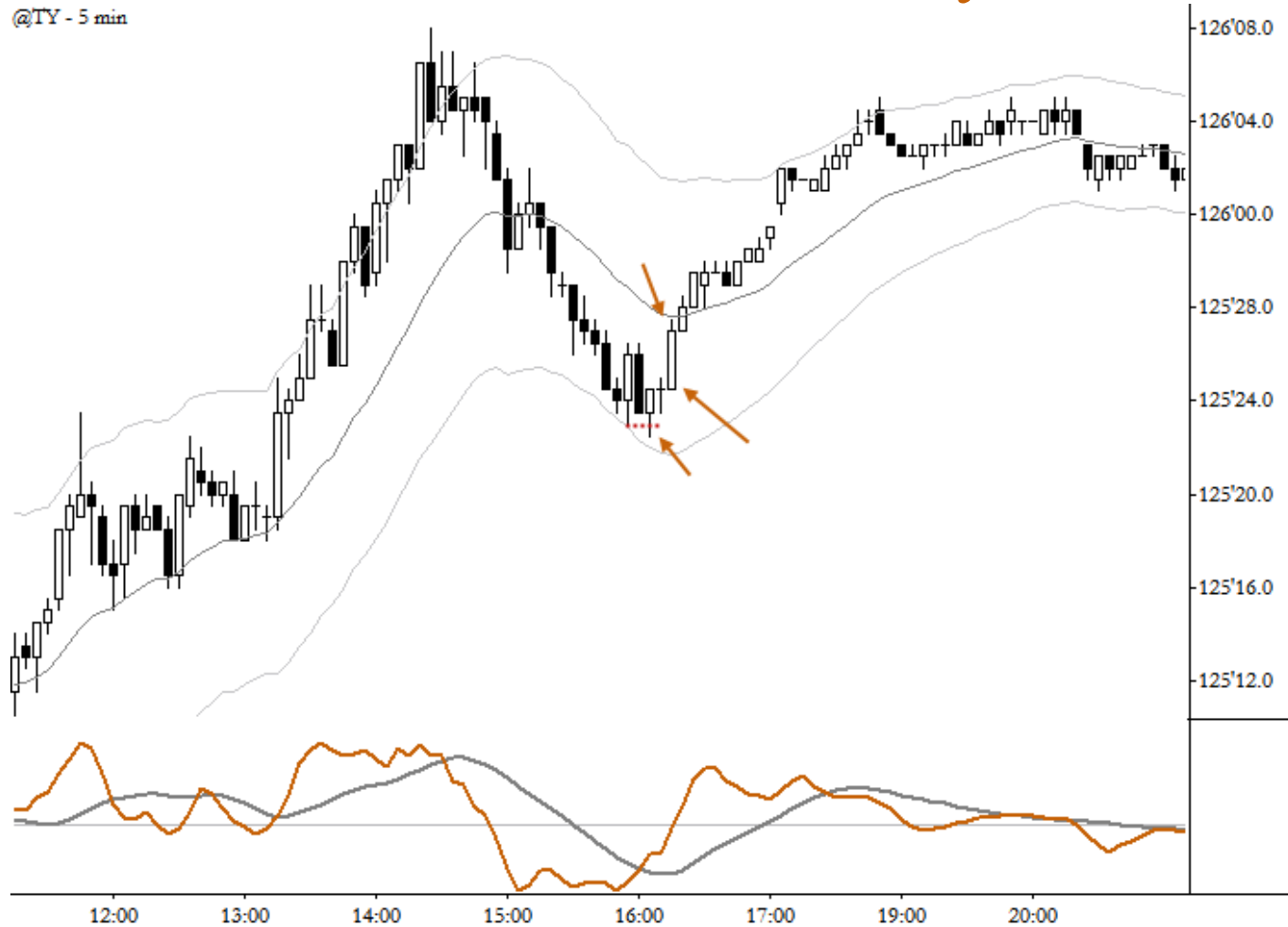
Good LTF Failure Test Entry



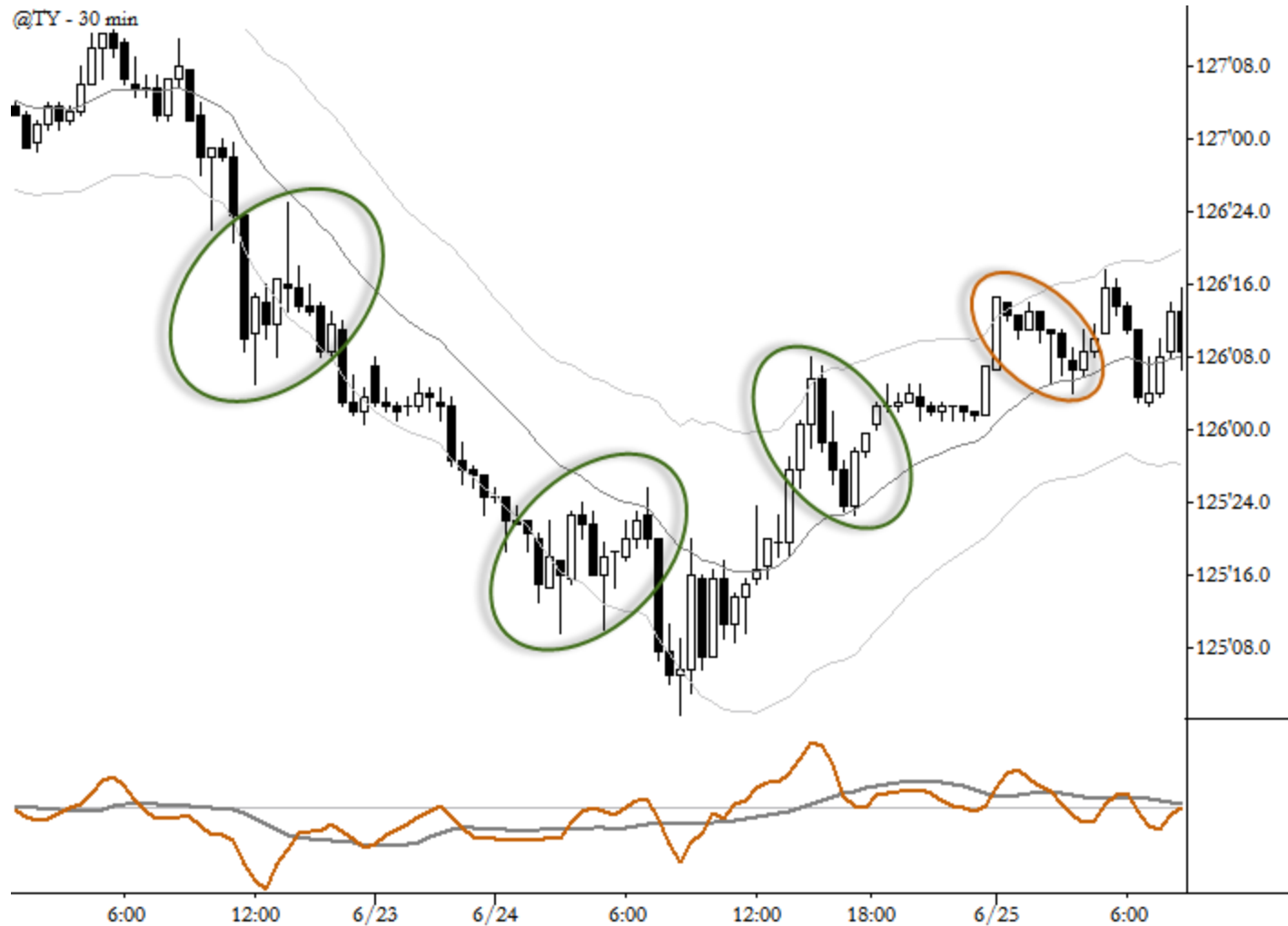
First Pullback After Trend Change



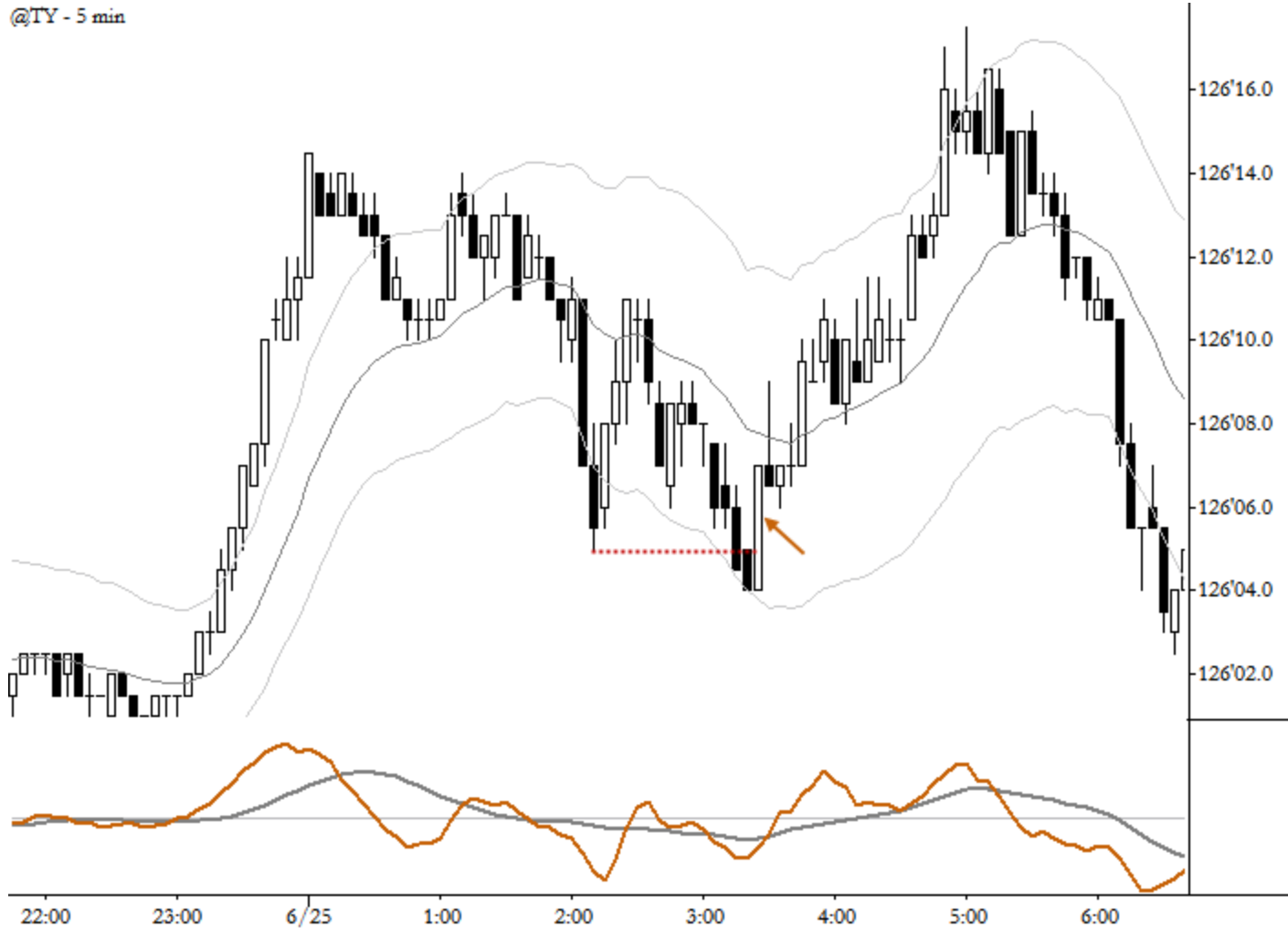
Very Small Failure Test: Difficult Entry



Pullback in an Established Trend



Clean LTF Failure Test Entry



Caution


- Beware the “Timeframe Justification System”
- Be clear about what your focus timeframe is and always trade that timeframe.
- If you bump a losing trade up to a higher timeframe to find a reason for holding it, you may be in trouble.
 - (You might legitimately bump a winner up.)
- If you find yourself looking at a timeframe you never look at while you’re in a trade, you may have a problem.
- **Always trade your focus timeframe.**



Summary of MTF Analysis

- There are not always MTF considerations.
- When HTF is trending, patterns that work with that trend will resolve more easily.
- Then HTF is trending, patterns against that trend tend to fail.
- When HTF is ranging, expect sharp, violent LTF trends.
- Breakouts can be much more significant if supported by HTF structure.
- Ranges on LTF are usually HTF continuation patterns. It is possible to monitor HTF trend integrity via these patterns.



 WILEY Trading

MARKET STRUCTURE,
PRICE ACTION, AND
TRADING STRATEGIES

THE
ART AND SCIENCE OF
TECHNICAL
ANALYSIS

ADAM GRIMES



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