



# Position Sizing and Trade Management



# The Problem

- Most writers focus on entry patterns.
- Where we get into a market is only part of the puzzle, and, perhaps, one of the less important.
  - Can be profitable with random entries. What does this tell you?
- There are many opportunities for mistakes
  - Trading too much or too little
  - Correlated risks
  - Exiting too soon or too late



# Outline:

- Position sizing
- Trade management decisions
- Psychology



# Step One: Embracing Randomness

- Being a trader (or an asset manager) means accepting a certain degree of randomness.
- Most people have very poor intuition regarding randomness.
- Even a profitable system can have very long periods of losses. On the other hand, even an unprofitable system can have significant winning streaks.



# A Sample Trading System

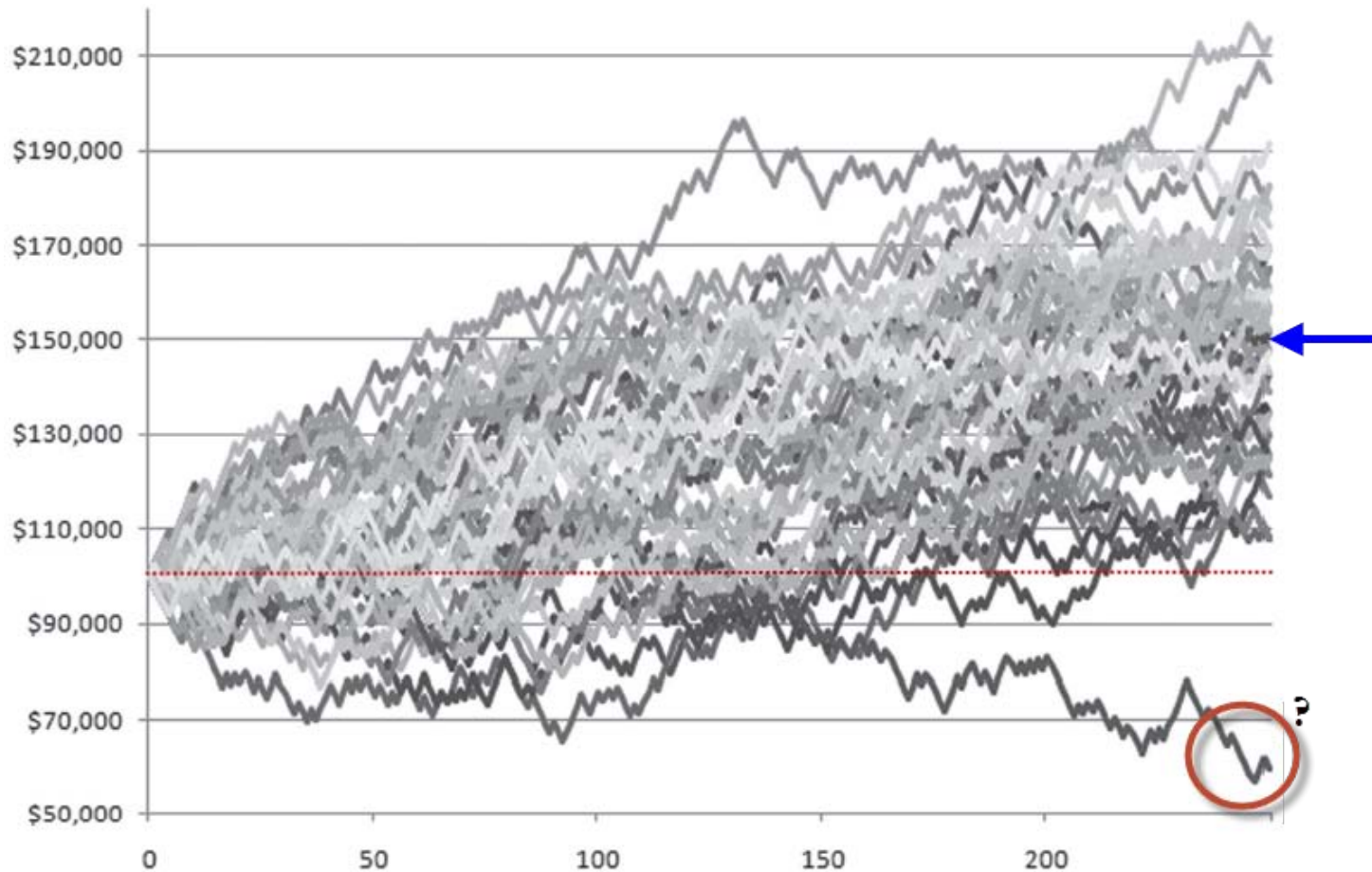
- Wins 50% of the time. Wins are always 1.2R
  - Loses 50% of the time. Losses are always 1R
  - What is the expected value of this system?
- (50% \* 1.2) – (50% \* 1.0) = 0.1
- (What does this mean?)
- Assume we trade 250 trades from this system, risking \$2,000 per trade with a starting equity of \$100,000.

- “Should” end up with \$150,000

$$(250 * \$2,000 * 0.10) = \$50,000 \text{ profit}$$



# Results Are Not Always What You Expect



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# Managing Randomness

- First, understand there are no guarantees in trading over any time period.
- Losses are certain to happen, and there is the potential for outsized losses and bad surprises.
- How do you protect yourself from the damage of these losers while maximizing the potential gain from winning trades?



# Position Sizing

- “How much should I trade?”
- Guiding principles:
  - No one loss can ever take you out of the game
  - Minimize the damage from a string of losses
  - Eliminate degrees of freedom
  - Drive toward consistency in the bottom line





# Position Sizing Plans

- Fixed Units
- Equal Dollar Allocation
- Fixed Dollar Margin Allocation
- Equal Risk
  - Equal Volatility (ATR, StDev, etc.)
  - True Equal Risk
- Optimized Approaches
  - Kelly
  - Optimal  $f$



# Position Sizing: Equal Risk

- True equal risk is only possible with a defined stop for each trade.
- Choose a percent of account equity to be risked on each trade.
  - Reasonable window is 2% - 4% per trade
  - Anything over 5% is very aggressive. Always consider the impact of a string of losses.
- Size each trade so that a loss at the stop point generates that percentage loss to the account.



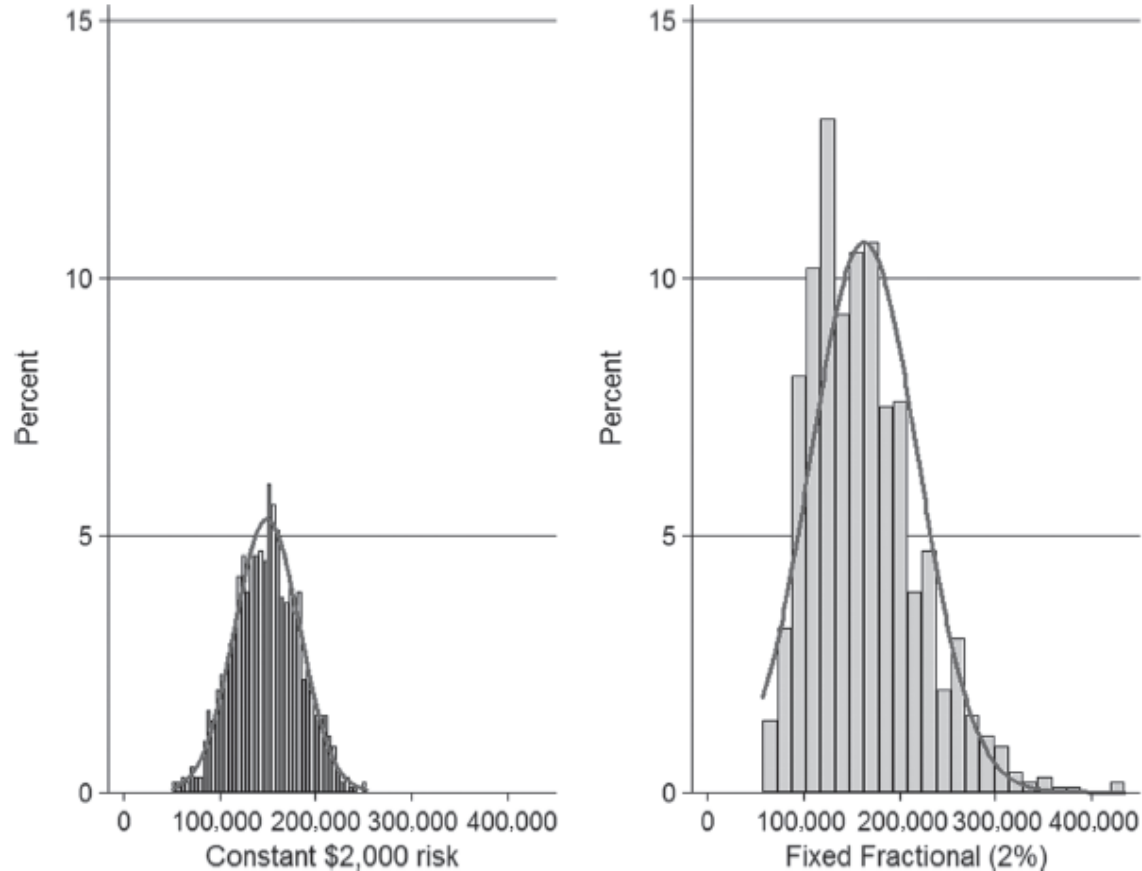
# Comparison of Position Sizing Methods

	<b>Fixed 2,000</b>	<b>2% of Equity</b>
Mean Terminal Value	149,259	163,033
Median Terminal Value	152,000	158,317
Std Dev of Terminal Value	33,760	56,266
Coefficient of Variation	0.23	0.35
Mean of Max Value	159,070	179,236
Mean of Min Value	89,254	89,385
Highest Terminal Value	253,200	434,738
Lowest Terminal Value	50,800	57,654
Percent Terminal DD $\geq$ 75%	0.0%	0.0%
Percent of Accounts Bankrupt	0.0%	0.0%

1,000 trials based on \$100,000 starting equity



# Comparison of Return Distributions



# Position Sizing: Conclusions

- Always consider the tradeoffs.
- Understand the impact of every decision you make.
- The best position sizing plans consider change in account size due to wins and losses.
- Risk is not symmetrical.
- Optimized approaches bring serious risks when reality diverges from expectations.



# Trade Management

## The Key Questions:

- Where am I getting out if I'm wrong?
  - Every trade must have pre-determined risk point.
- Where am I getting out if I'm right?
  - Consider impact of taking partial profits vs. taking partial losses.
- Time stop?
- All in or scale in?
- All out or scale out?
  - Will you scale out at a loss or only at a profit.

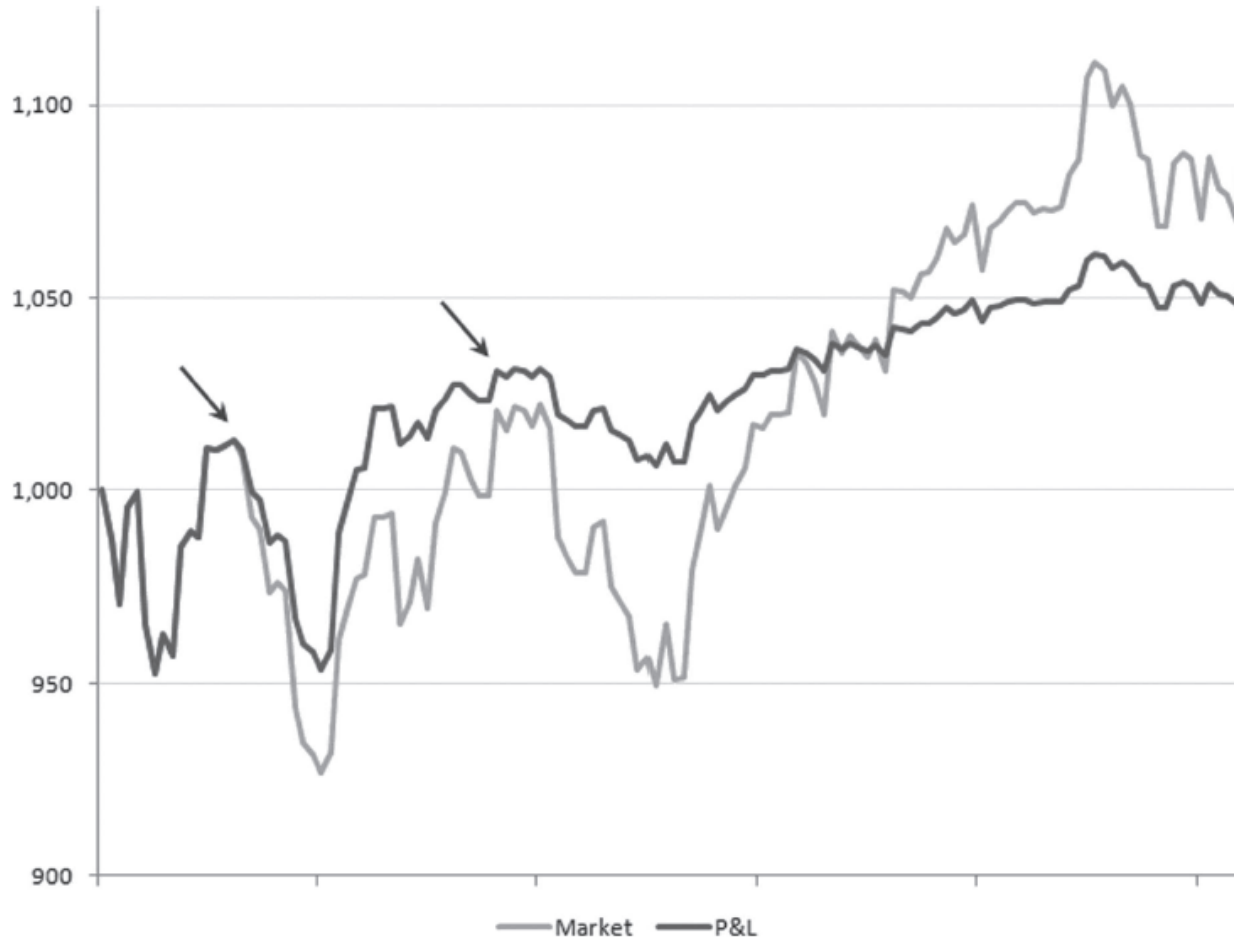


# Initial Stop Placement

- Options:
  - Fixed % price movement
  - Fixed volatility-adjusted price movement
  - Market structure
- Even a bad one is better than no stop at all.
- Stay out of the noise.
- Respect this stop without question.



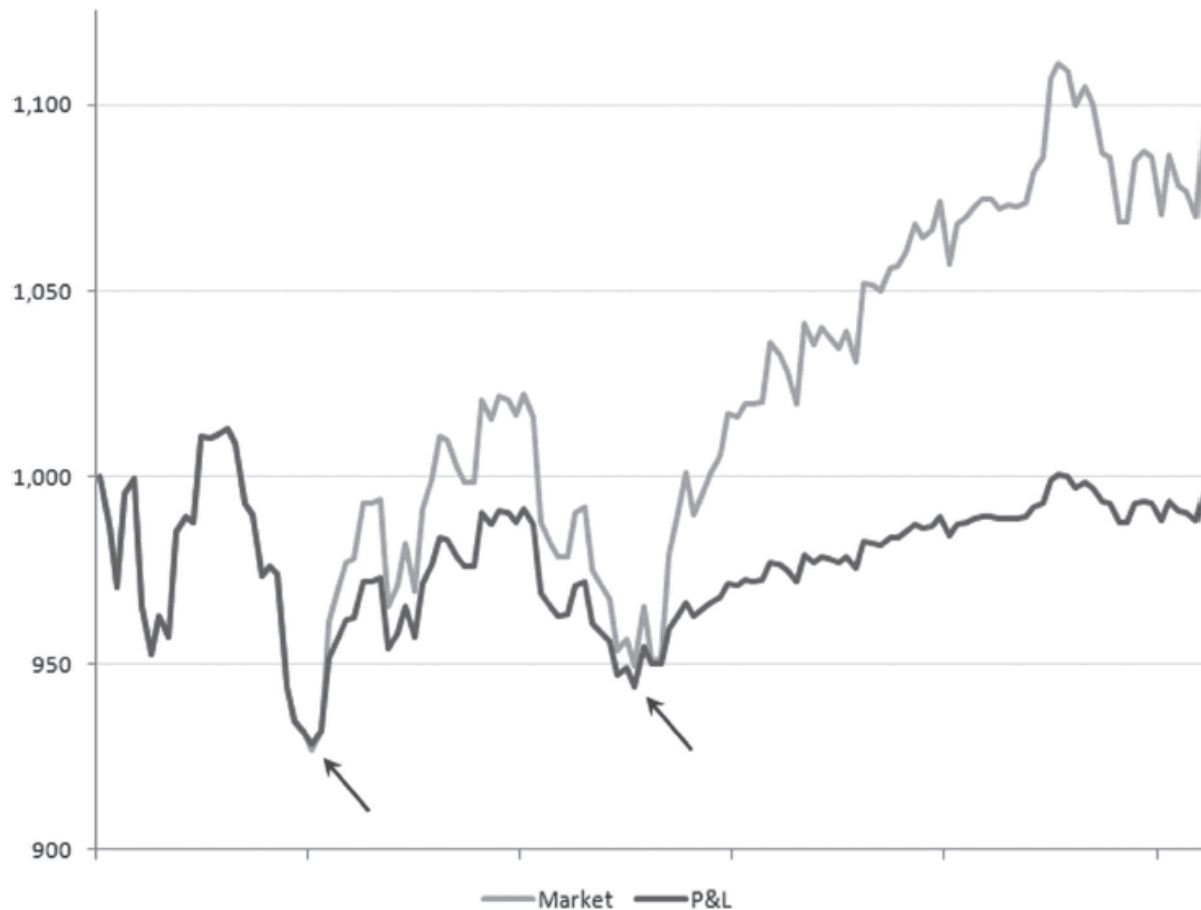
# Taking Partial Profits



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# Taking Partial Losses



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# A Sample Plan for Partial Profits

- Take partial profits at fixed multiples of your initial risk.
  - 1X and 2X are good starting points.
  - Exit between 25%-33% of the position at each target.
  - The *less* size you take off here, the more aggressive you are being.
- Can also take profits at discretionary points, but make sure you are adding value.
- Can choose to add back or not should the market retrace.
- Can hold remainder for extended move, and can build large positions in extended trends with little additional risk.



# Active Trade Management

- The same patterns that get you into a trade allow you to monitor the strength of the move as it unfolds.
- Many possibilities for psychological mistakes here.
  - Do you have an accurate assessment of your own skill and the value your decisions add?



# Active Trade Management Questions

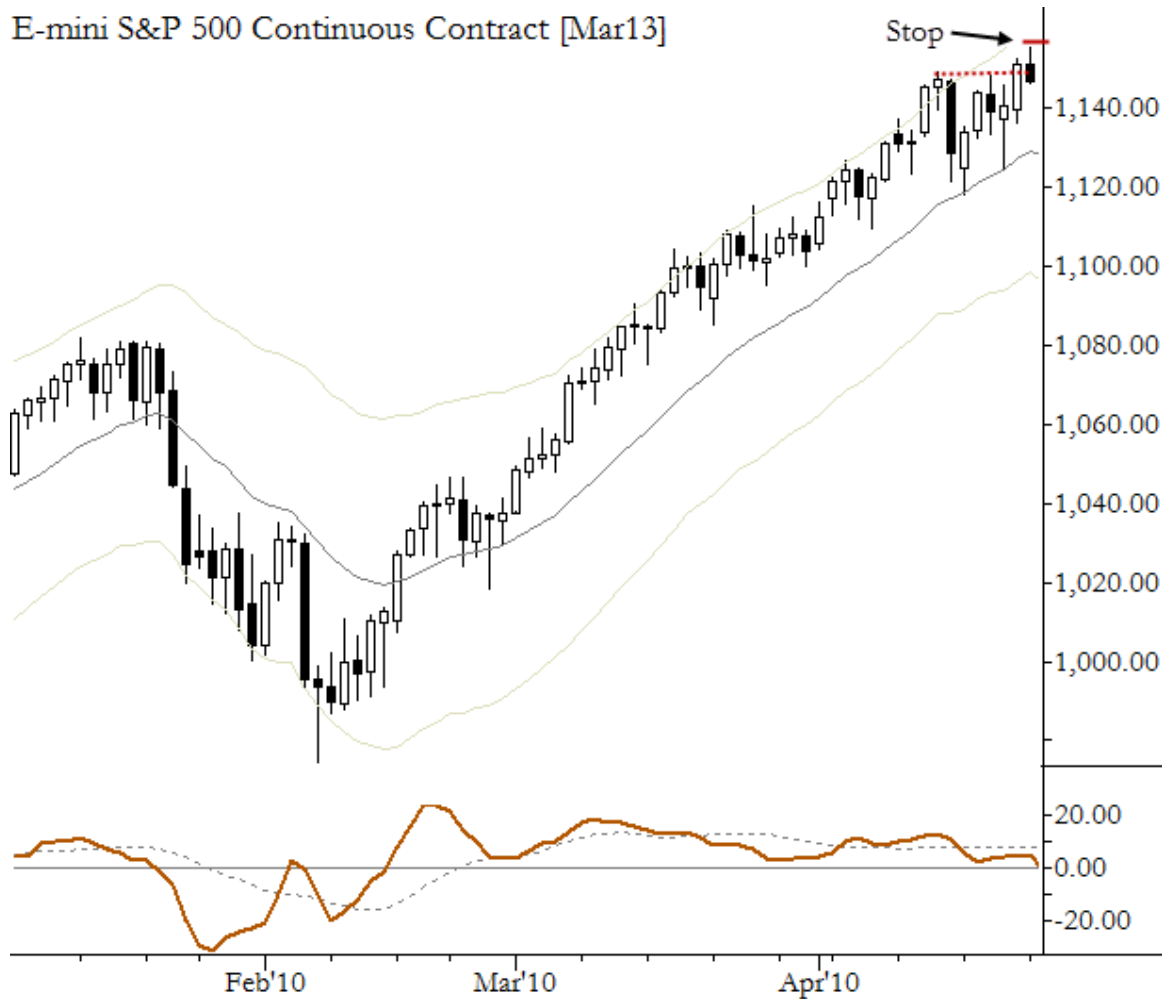
## (Assuming Uptrend)

- Are upswings longer than downswings, both in price and time?
- How is price moving out of pullbacks?
- How is weakness absorbed?
- Are failure tests setting up?
- Do failure tests fail?
- Any evidence of climax?
  
- Notice what is not on this list:
  - Support/Resistance
  - Divergence



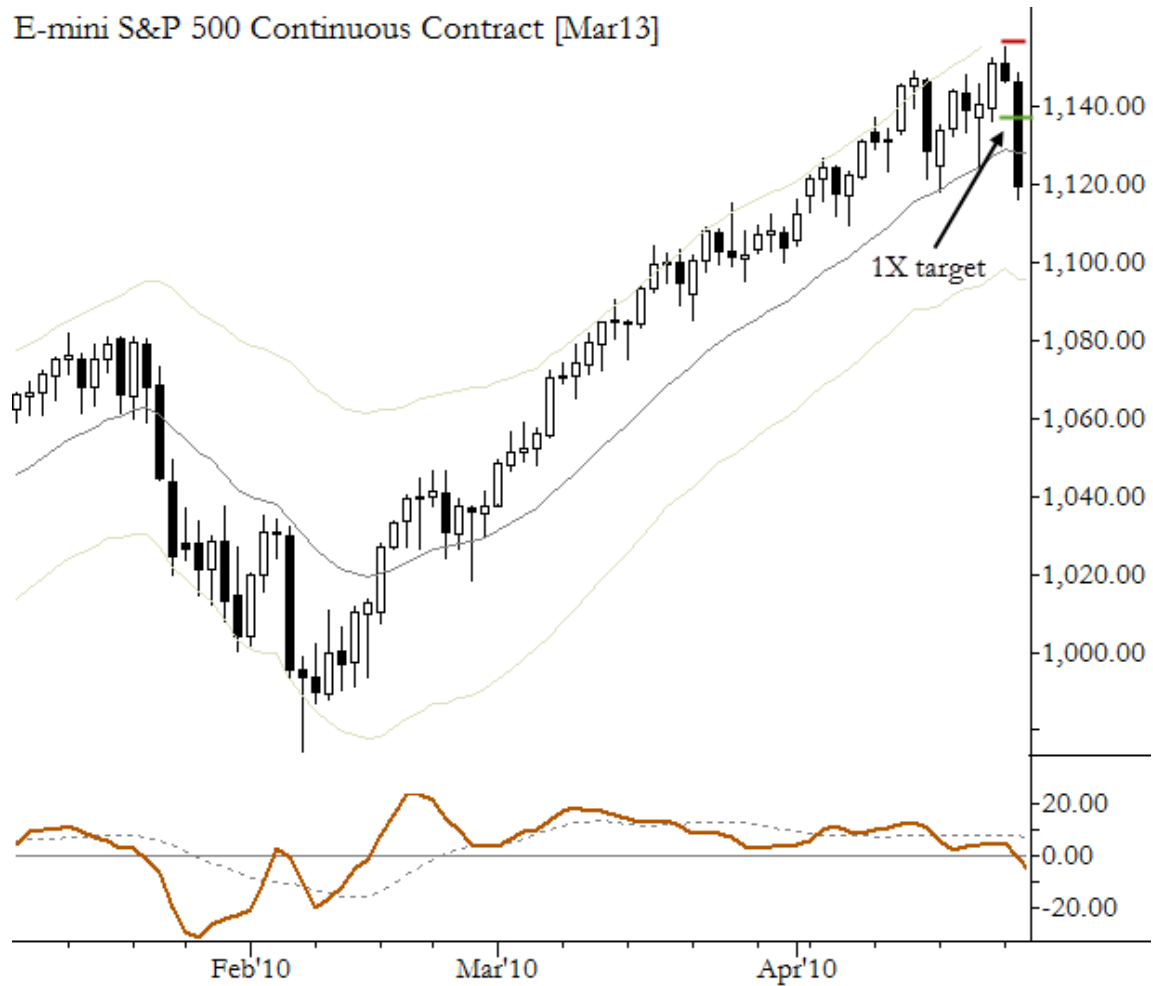
# Trade Example I

E-mini S&P 500 Continuous Contract [Mar13]



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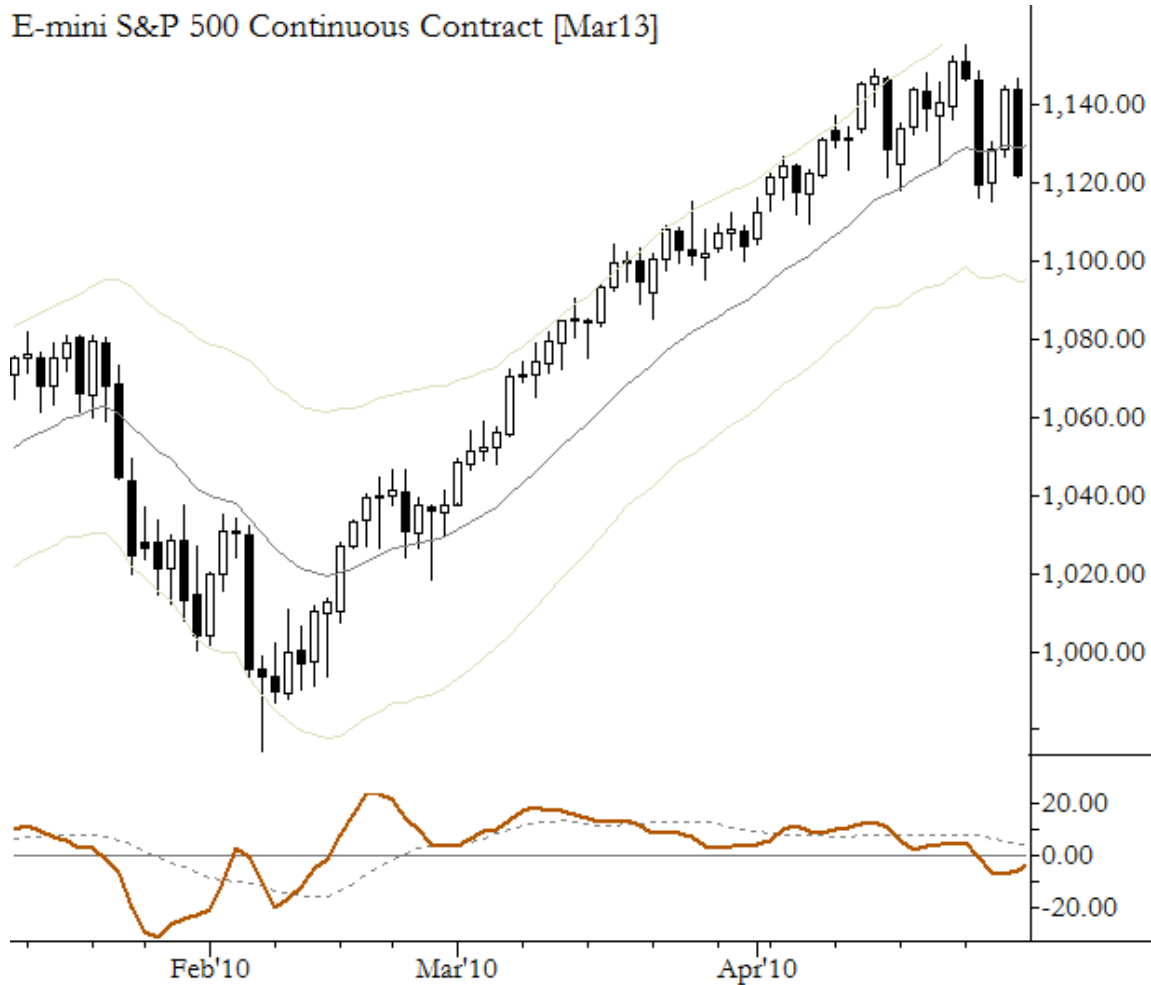
E-mini S&P 500 Continuous Contract [Mar13]



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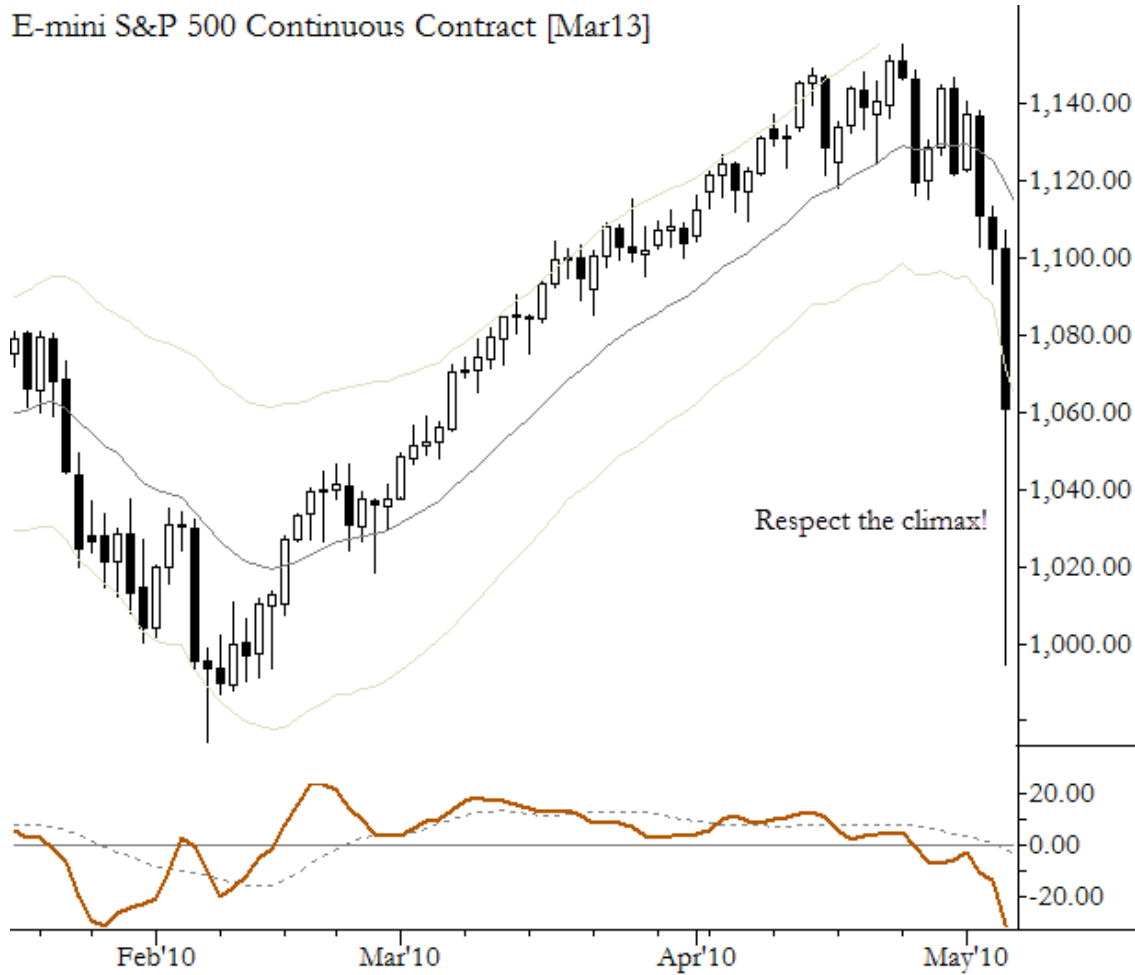
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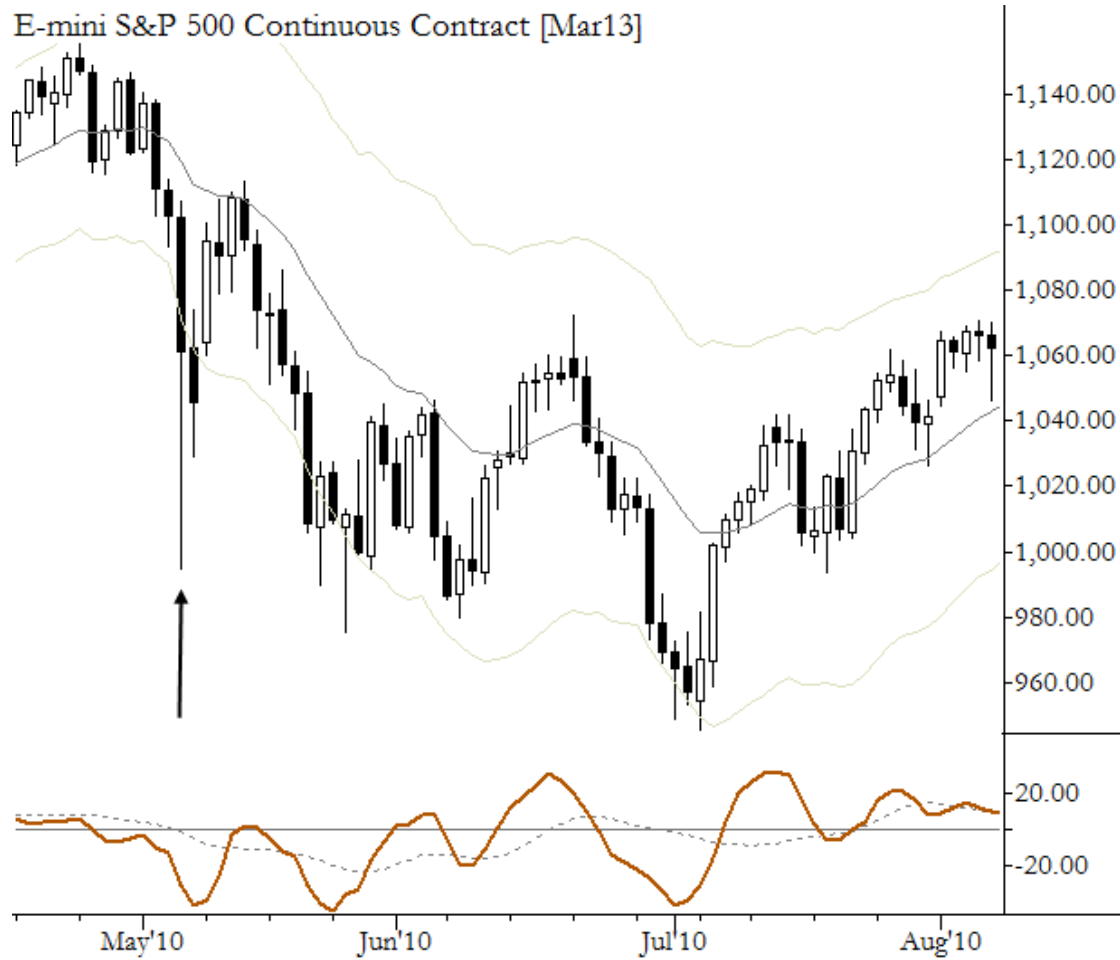
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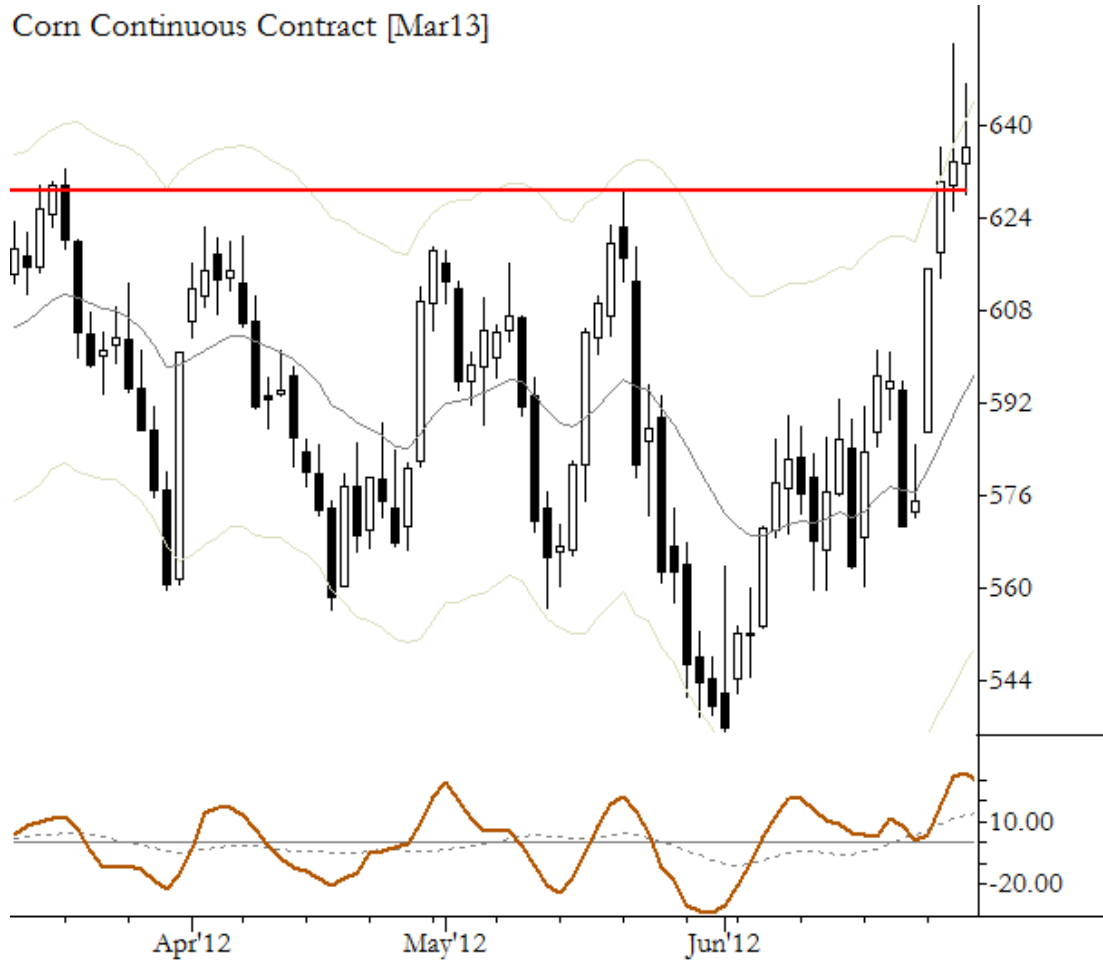
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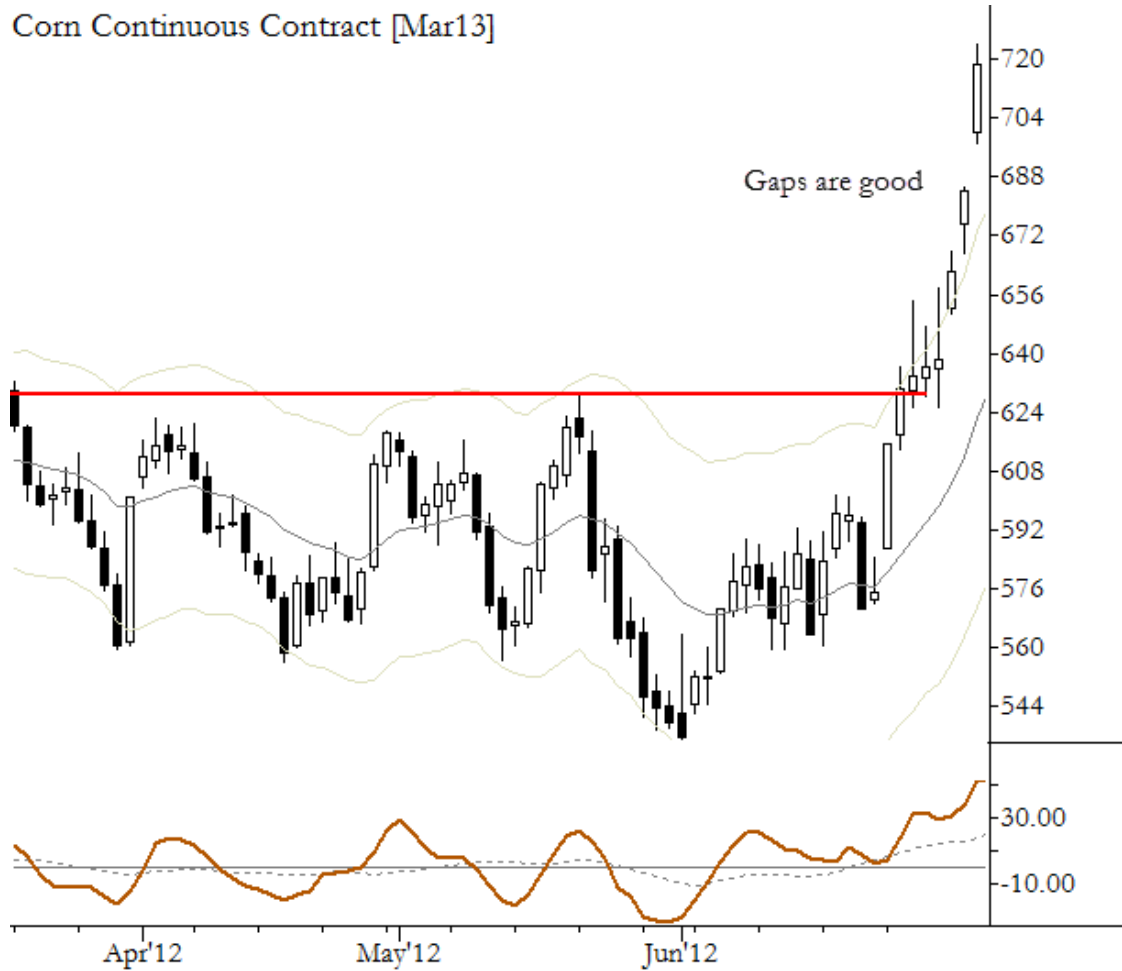
# Trade Example II

Corn Continuous Contract [Mar13]



# Trade Example II

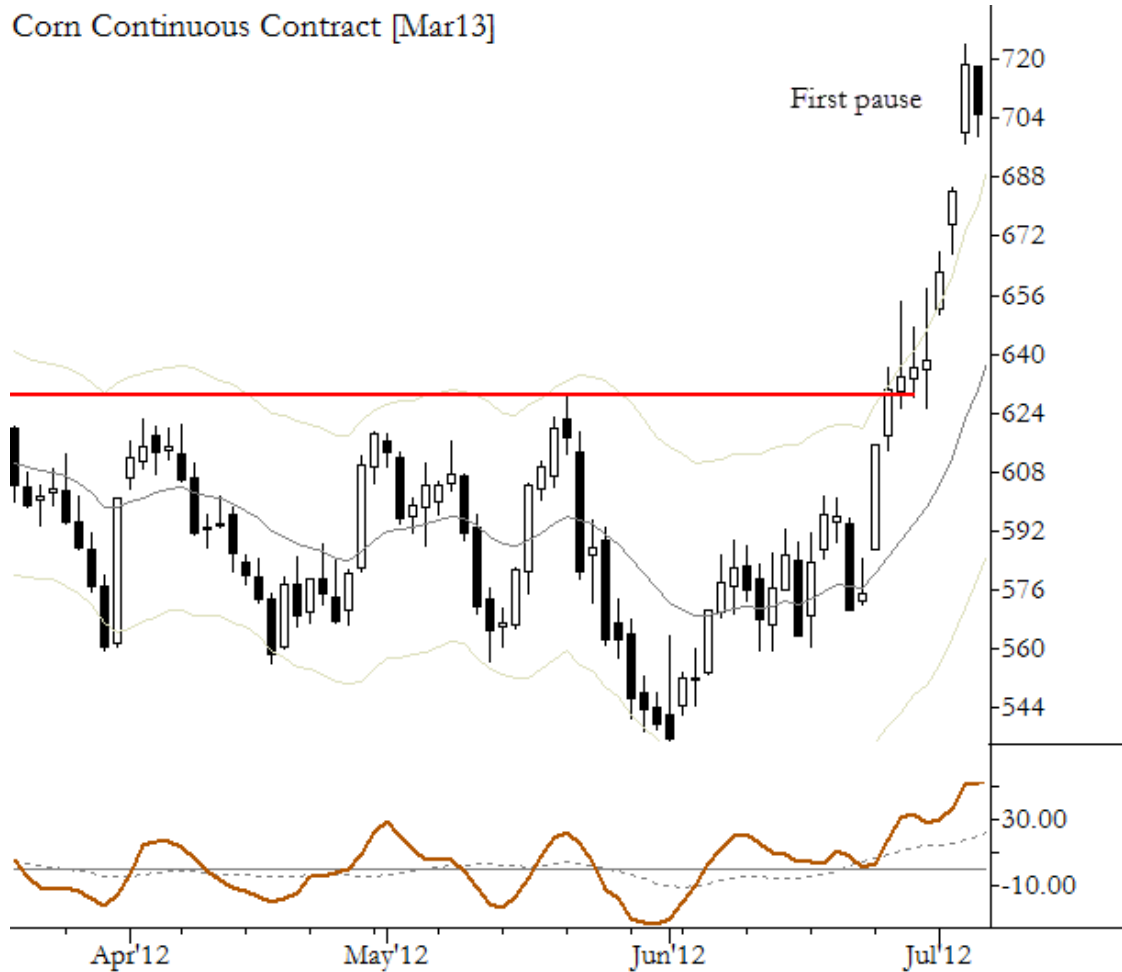
Corn Continuous Contract [Mar13]



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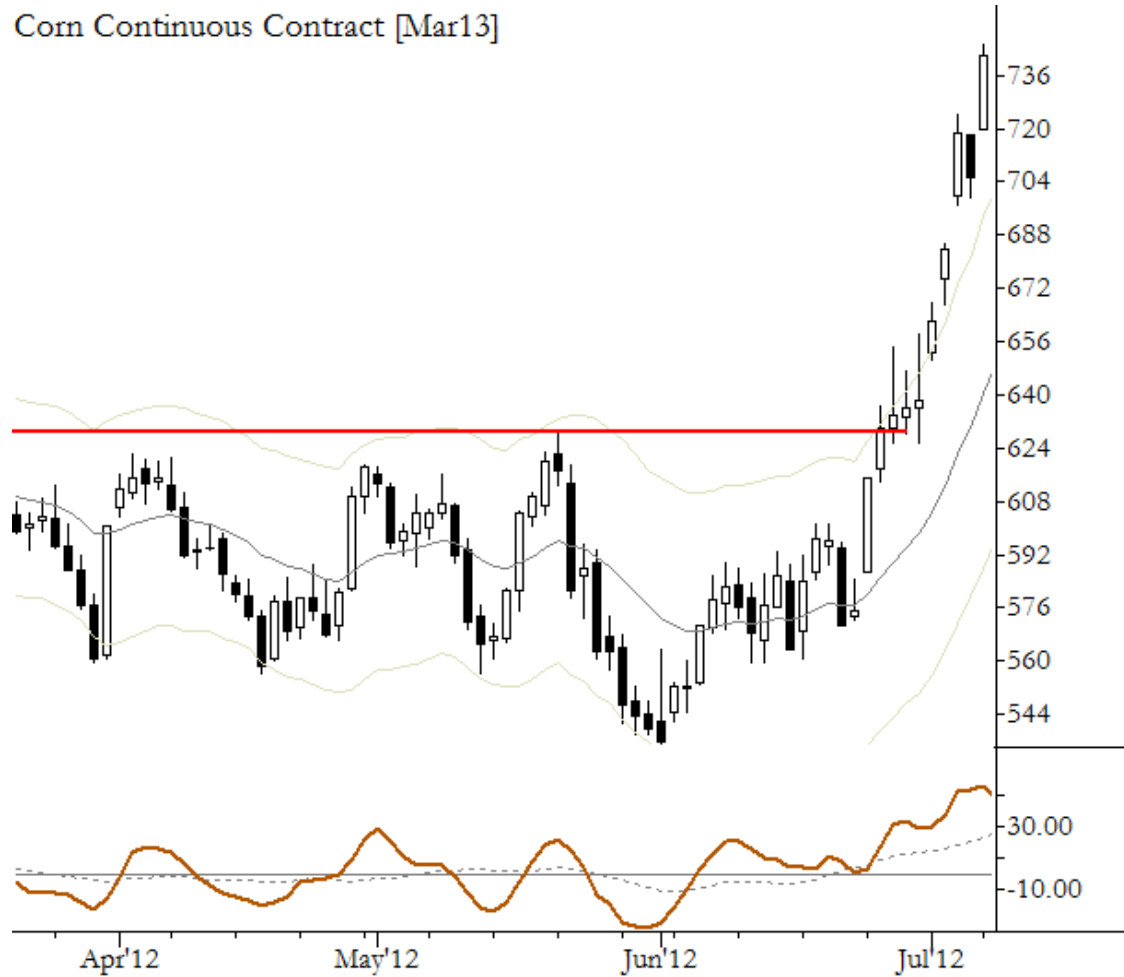
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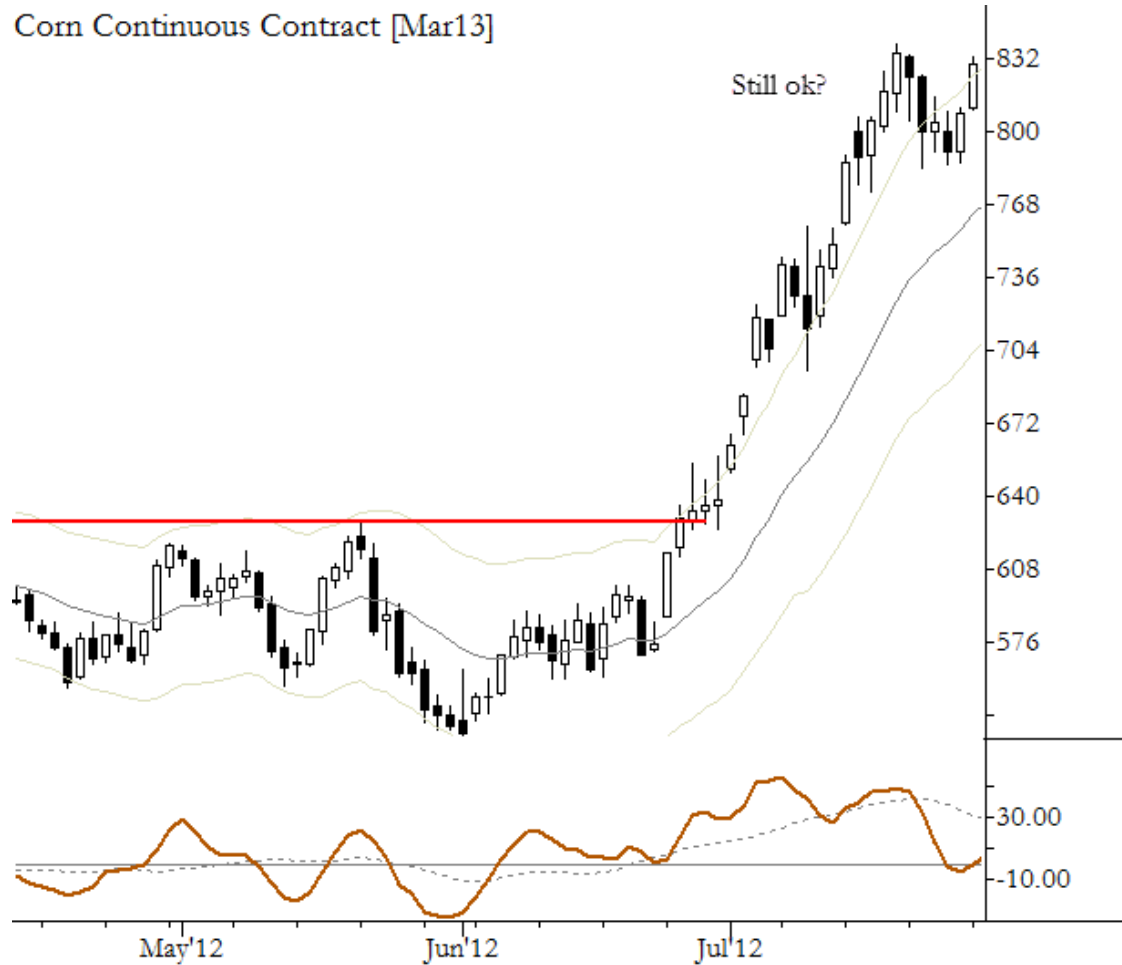
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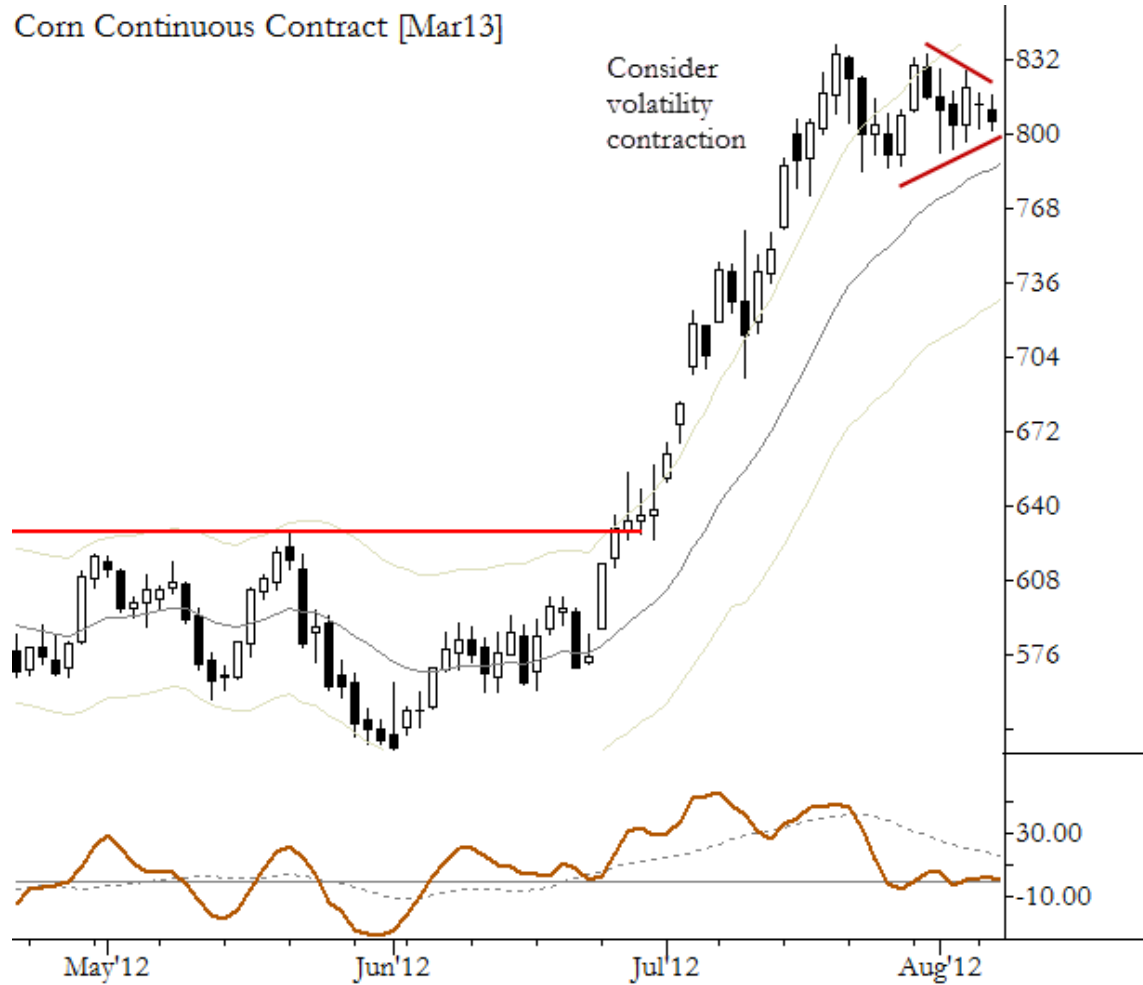
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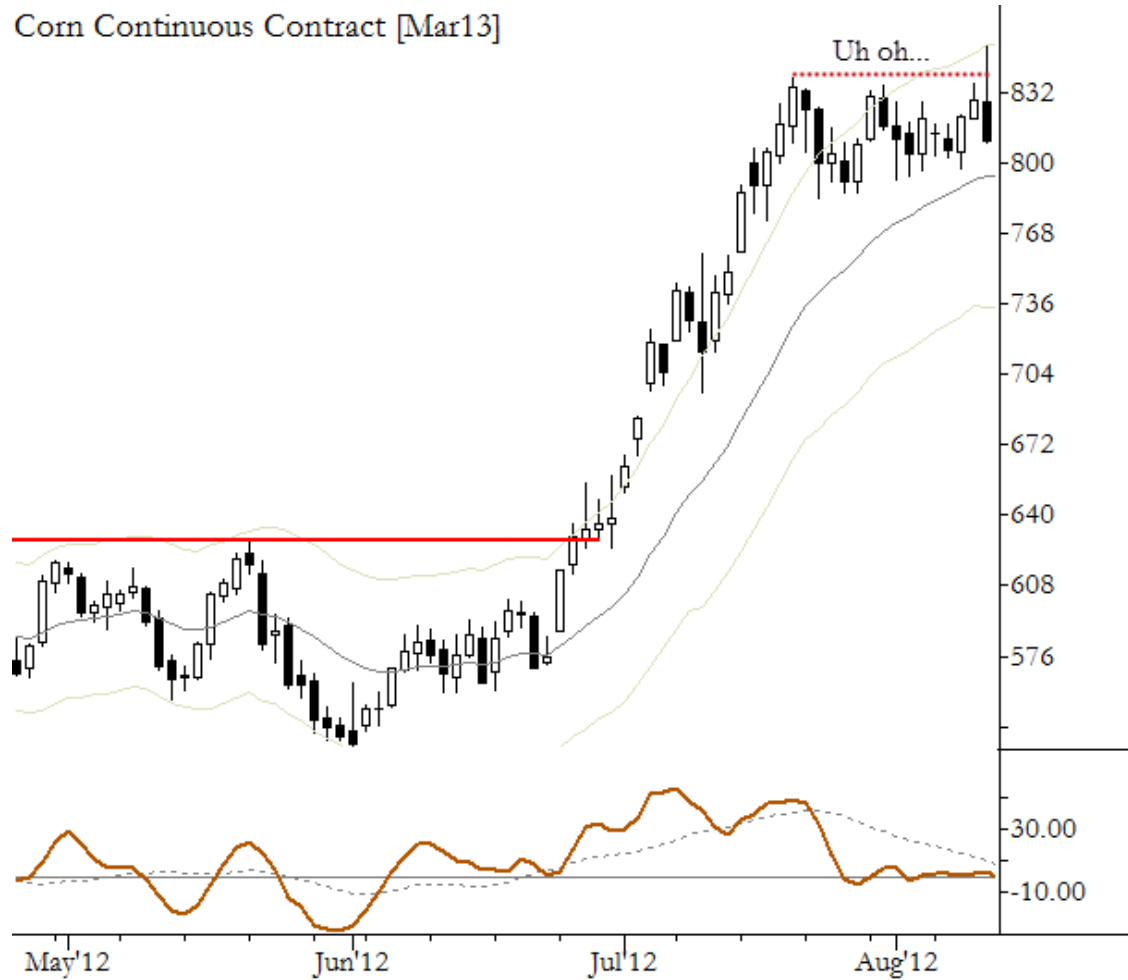
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Corn Continuous Contract [Mar13]



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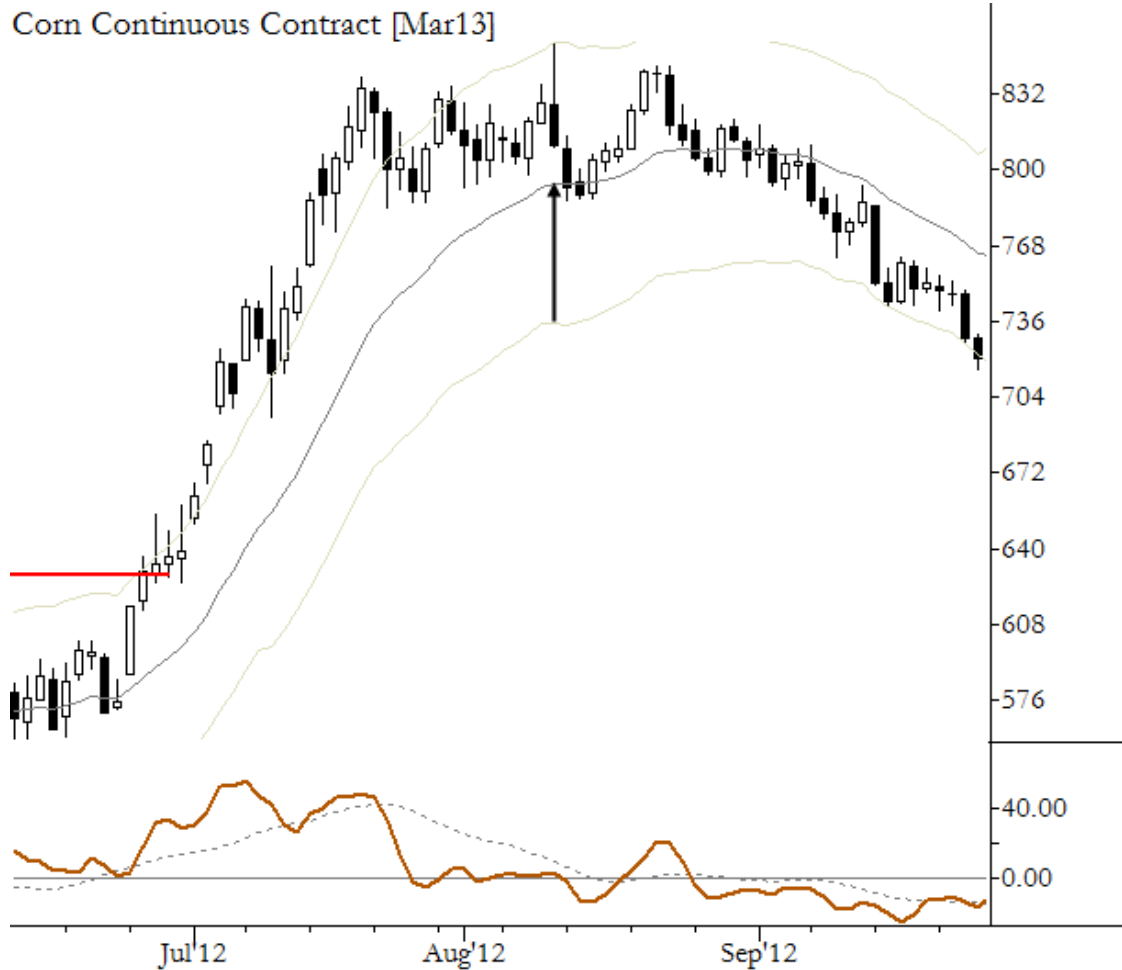
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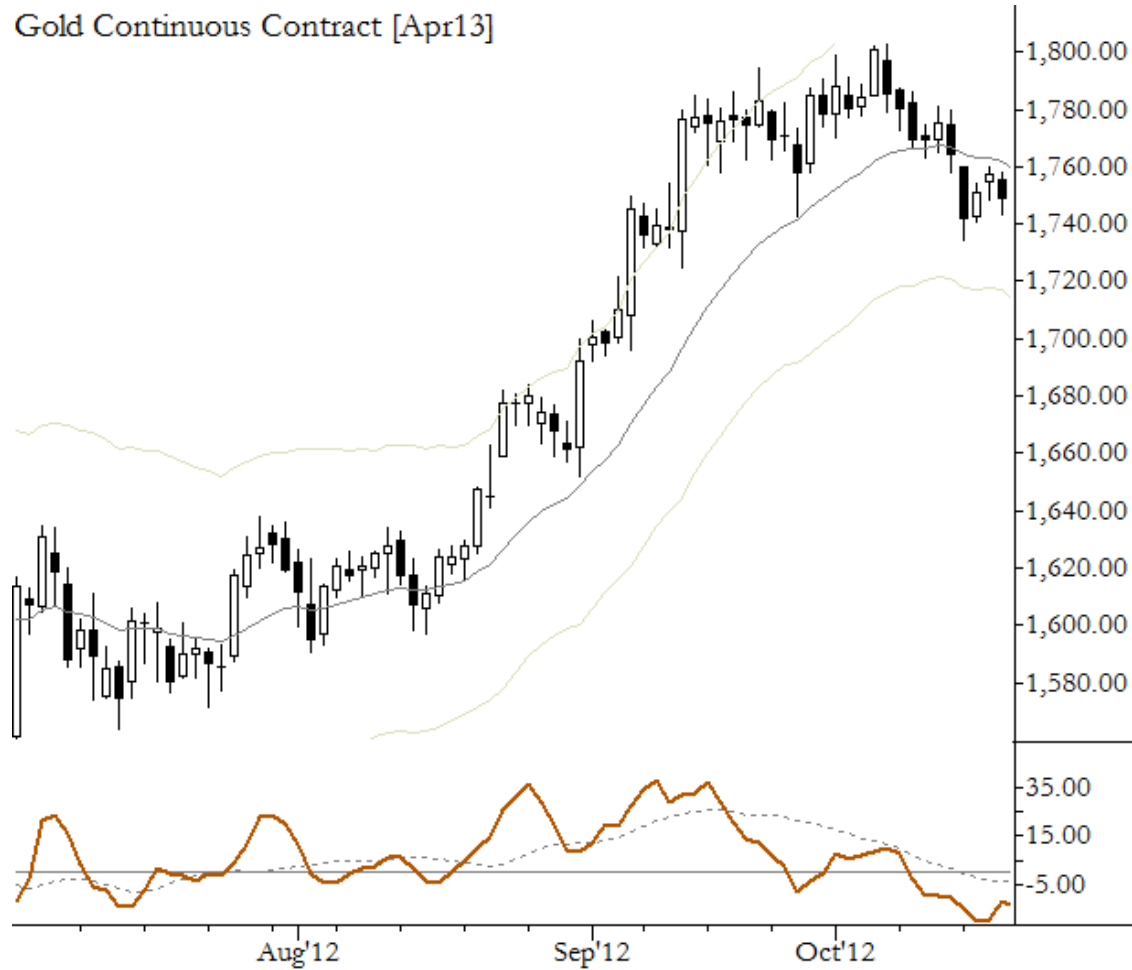
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# Trade Example III

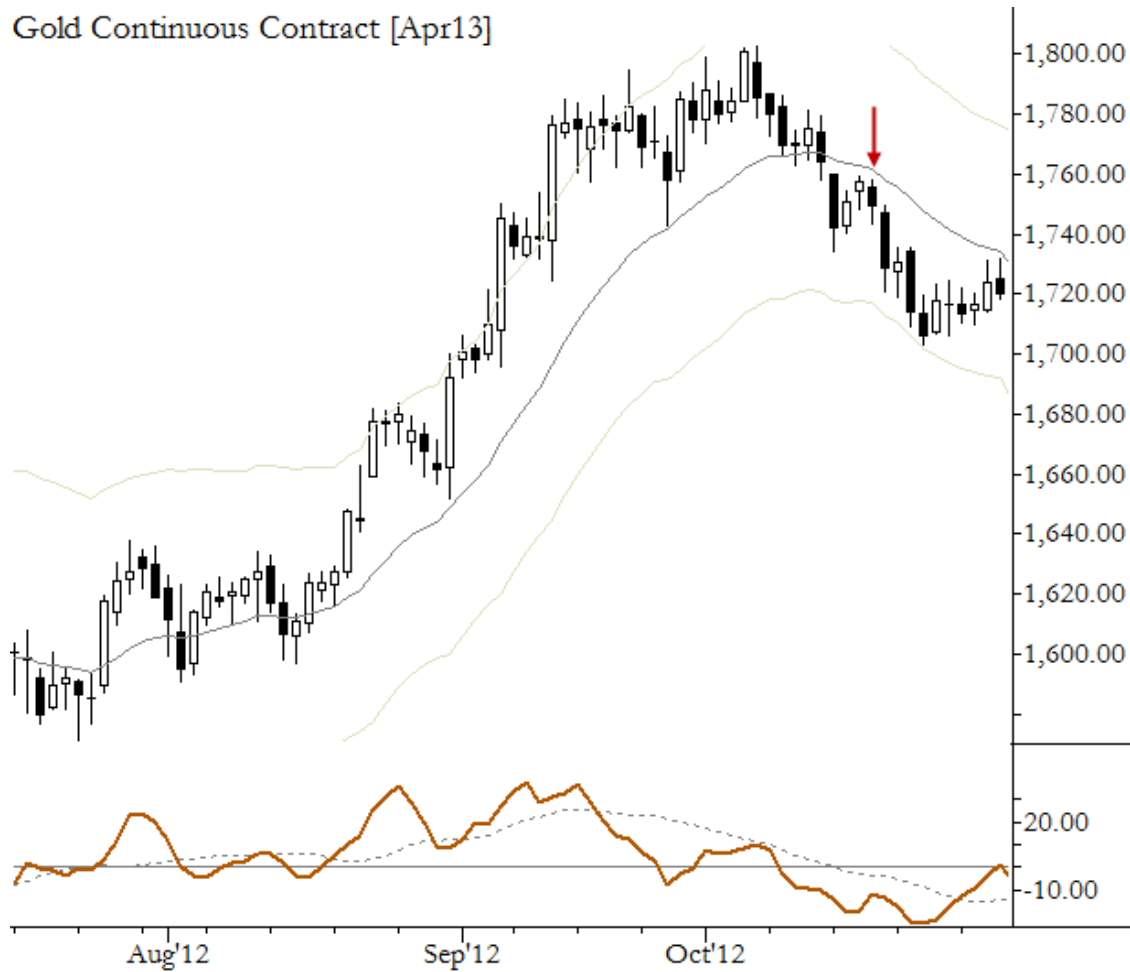
Gold Continuous Contract [Apr13]



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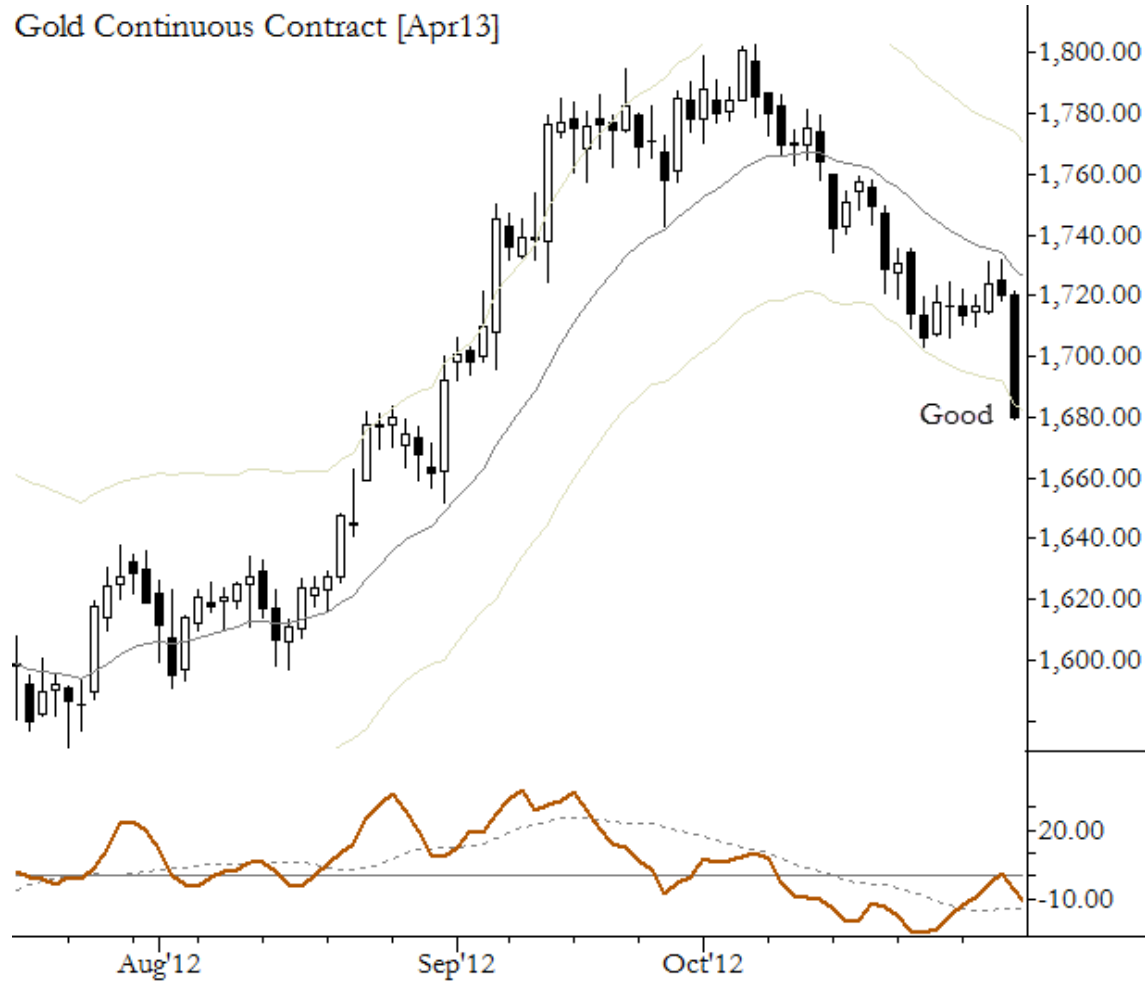
# Trade Example III

Gold Continuous Contract [Apr13]



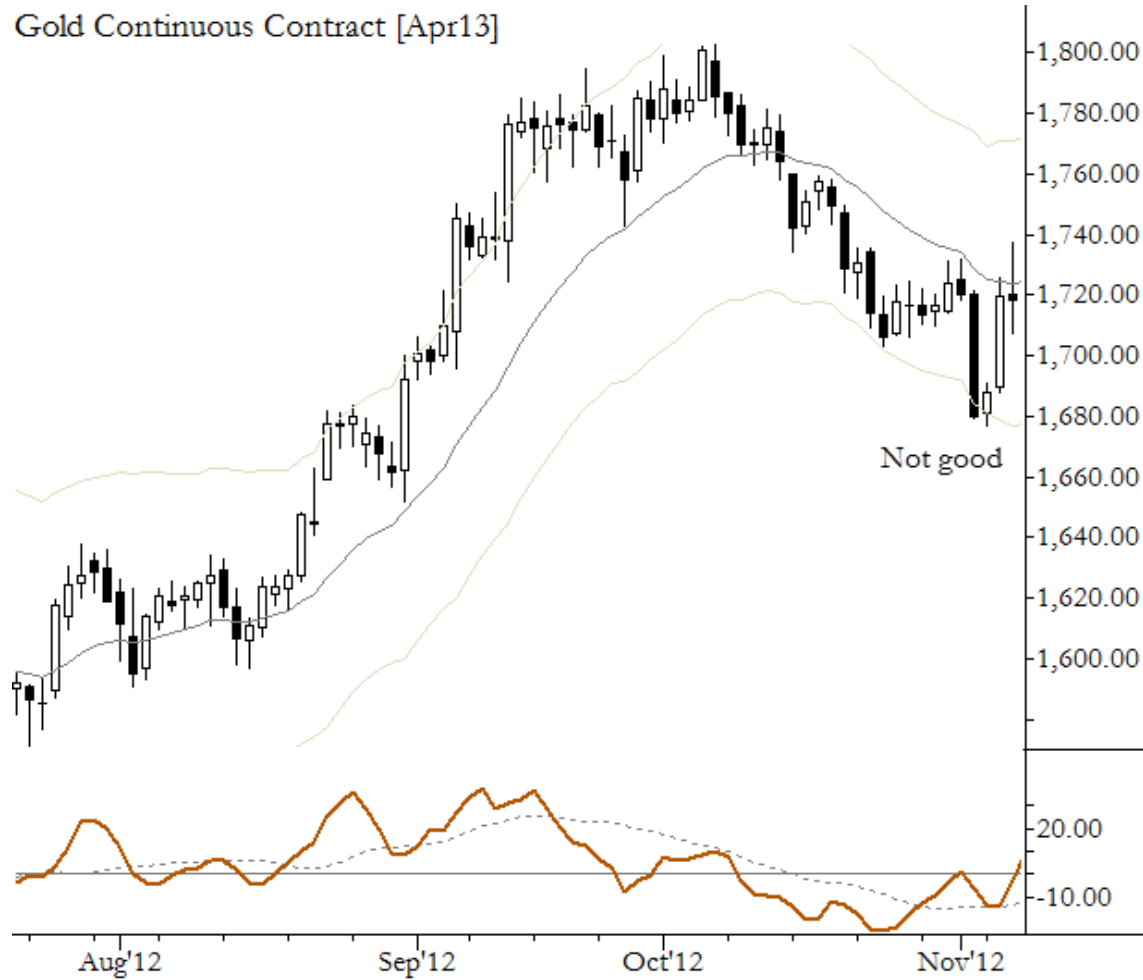
# Trade Example III

Gold Continuous Contract [Apr13]

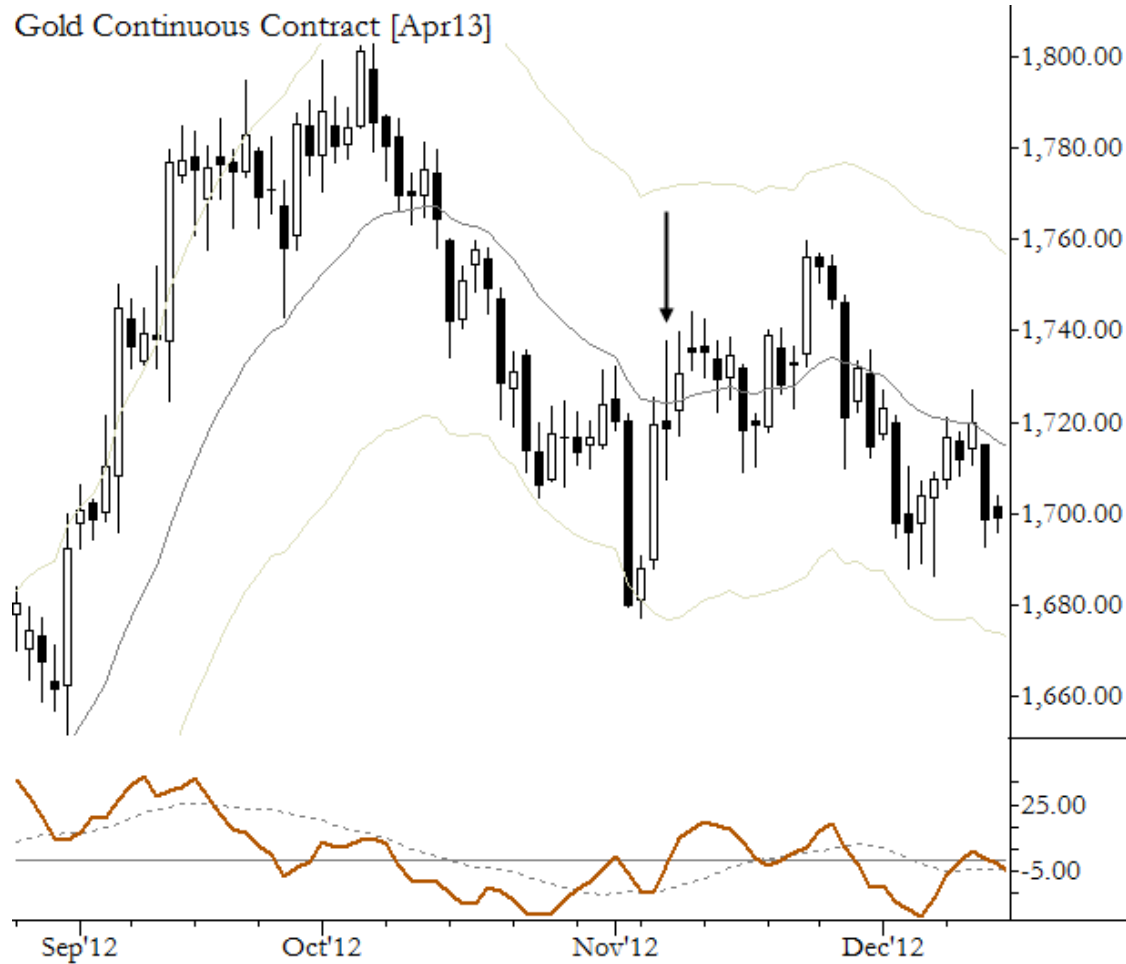


# Trade Example III

Gold Continuous Contract [Apr13]



# Trade Example III




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# Psychology

- Knowledge is not enough. Knowing what to do is not enough. You also have to do the right thing at the right time.
- Market action sets behavior and psychology against us.
- A good technical trading process (or system) can remove much of the emotion from the equation, but...
- Discretionary trade management decisions often bring emotion back in.
- The key to all of this is understanding and embracing risk.
- **The risk you worry about the most may not even be true risk.**



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# About Waverly Advisors, LLC:

## Tactical Playbook – **Available on Interactive Brokers - IBIS**

- In-depth Monday report
  - Technical setups for all major asset classes
  - Exact trade recommendations
  - Macro perspective on major events and risk factors
- Daily update
  - Updates to positions, stops, and trade management decisions

## Options Market Outlook – Contact Waverly Directly

- Quantitative analysis of options market
- Macro risk factors and analysis of market environment



# About Waverly Advisors, LLC

- Waverly Advisors, LLC is an SEC Registered Investment Advisor
- Our firm was founded by professional portfolio managers, traders and risk managers
- Broad and deep experience in the capital markets covering primary global equity, equity derivative, commodity, futures, currency and rate markets
- Our investment process is built upon our disciplined research process and risk management acumen
- We provide world class research as well as bespoke advisory and derivative services and count some of the largest asset managers in the US and Canada among our clients



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