



Using Futures and Options to Manage Hog Price Volatility

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Introduction

- Presentation based on our company's recent column in Country Guide – applied to the pork industry.
- Work with farm and agribusiness clients to manage price risk
- Issues in managing price risk include:
 - Failing to sell at high prices and then taking low ones
 - Forward contracting at relatively low prices and foregoing opportunity
 - Selling futures and then having large margin calls

Introduction

- Those are manifestations of fear and greed.
- Constantly have “bull bag” and “bear bag” – it’s what makes a market
- Particularly relevant in red meat at the moment – bearish supply numbers, bullish demand, uncertain trade policy
- So, are there any techniques that can help manage some of these issues in uncertain markets

Wrong Question

- Most frequent, but least relevant question is “what do you think these hog prices are going to do”?

Right Question,

- “As prices change, where do I take action and what action should I take”?

Objectives

- Characterize the conditions that give rise to the current uncertainty.
- Define some methods of reading price charts that can help change the question from “where do I think prices are headed?” to “where should I take action”?
- Suggest and illustrate some trading rules for deciding when and what actions to take.

Market Conditions: The Bear Bag

- Dec Hogs and Pigs - +2% total, 1% more breeding, 2% more market, 3% larger pig crop with 10.67 saved per litter vs 10.31 last year
- Follows similar increases in September
- About in line with expectations
- Total and market inventories a little smaller than Sept, but seasonal decline is less than in recent years.
- Continued uptrend since 2013/14 – all hogs have increased from ~ 67 mil to ~ 73 mil.

Market Conditions: The Bear Bag

- December Cattle on Feed – largest increase in 6 yrs. Above expectations
 - On feed + 8%
 - Placed + 14%
 - Marketings + 3%
- Red Meat Production +1% in Nov, +2 for beef, up slightly for pork.
- Analysts see expansion continuing because of positive production margins
- Managed Money funds are long. Can reverse quickly.

Market Conditions: The Bull Bag

- Despite the foregoing, back month prices rose after the reports
- Two new hog plants in Iowa
- US domestic pork demand is strong, with pork gaining on beef and poultry
- US Beef exports +14% through October, Pork +7%

Market Conditions: The Bull Bag

- Part of a major trend – US moved from being a net importer a few years ago to exporting 27% of production in 2016
- Canada remains around 65%, with major growth to Asia
- China is likely major growth area going forward, with 6+% compound annual income growth
- Small producers and processors being put out of business near cities
- Major expansion in Northeast, but many in China don't think it can keep up with demand
- Smithfield exports increased from 70KT in 2014 to 300K in 2016

Trade Policy: The Uncertain Bag

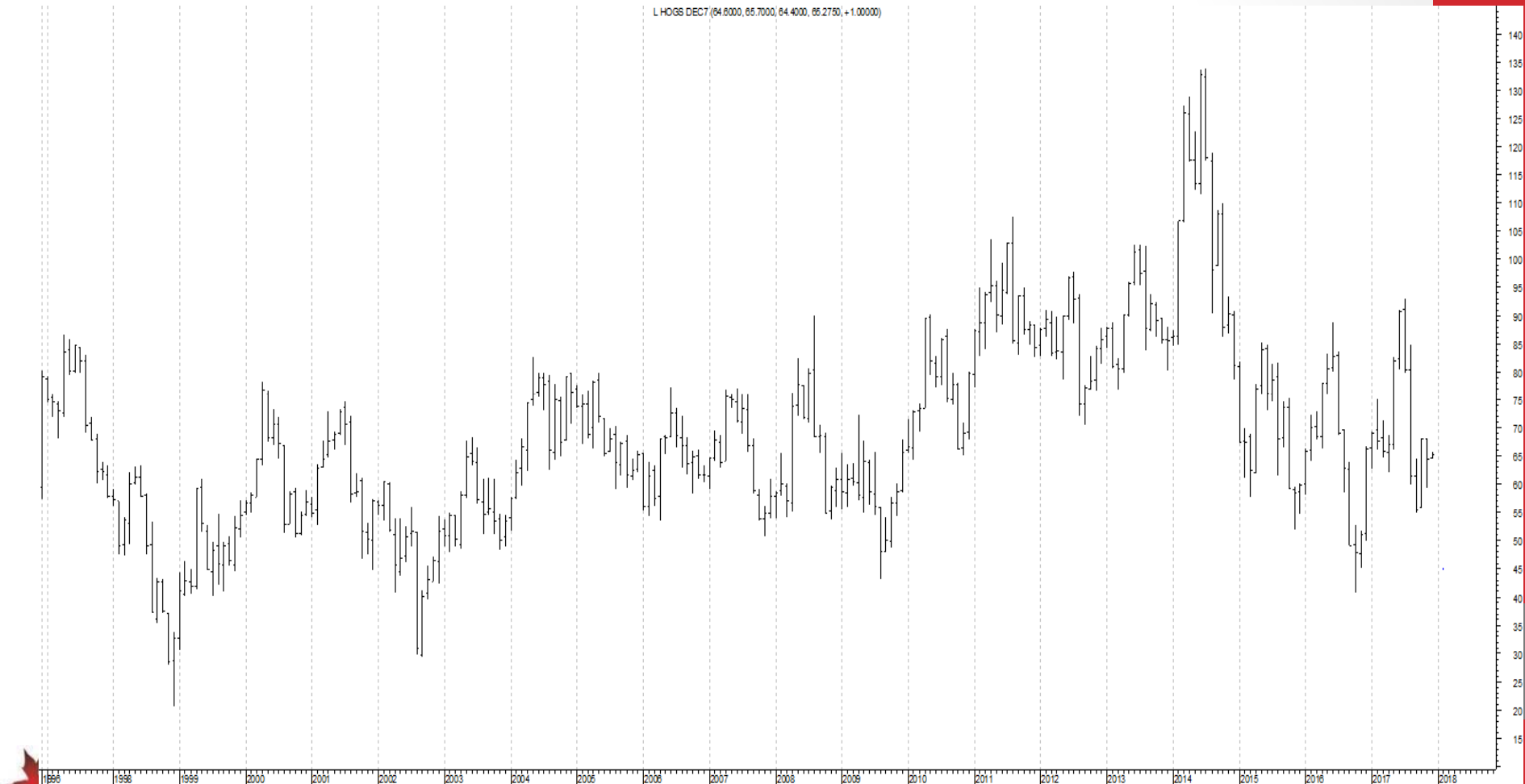
- The wise leader of the US threatens to pull out of NAFTA, creating uncertainty in red meat
- The wise leader of the US pulled out of TPP, giving Canada a wonderful opportunity in an agreement that favours red meat
 - (See New Yorker article, “Making China Great Again”!!)
- The wise leader of Canada is on the verge of being left out of TPP and, potentially, the Chinese equivalent
- Russia, Ukraine, Brazil are all investing heavily in transportation and port facilities. Canada, not so much.

Some Chart Concepts

- So, with all this uncertainty, where do we think prices are going ...!!
- Where should we take action and what action should we take?
- Six chart formations that help interpret price trends.
- Historical volatility:

Monthly Continuation, Lean Hogs:1997-2017

L:HOGS DEC7 (64.6000, 65.7000, 64.4000, 65.2750, +1.00000)



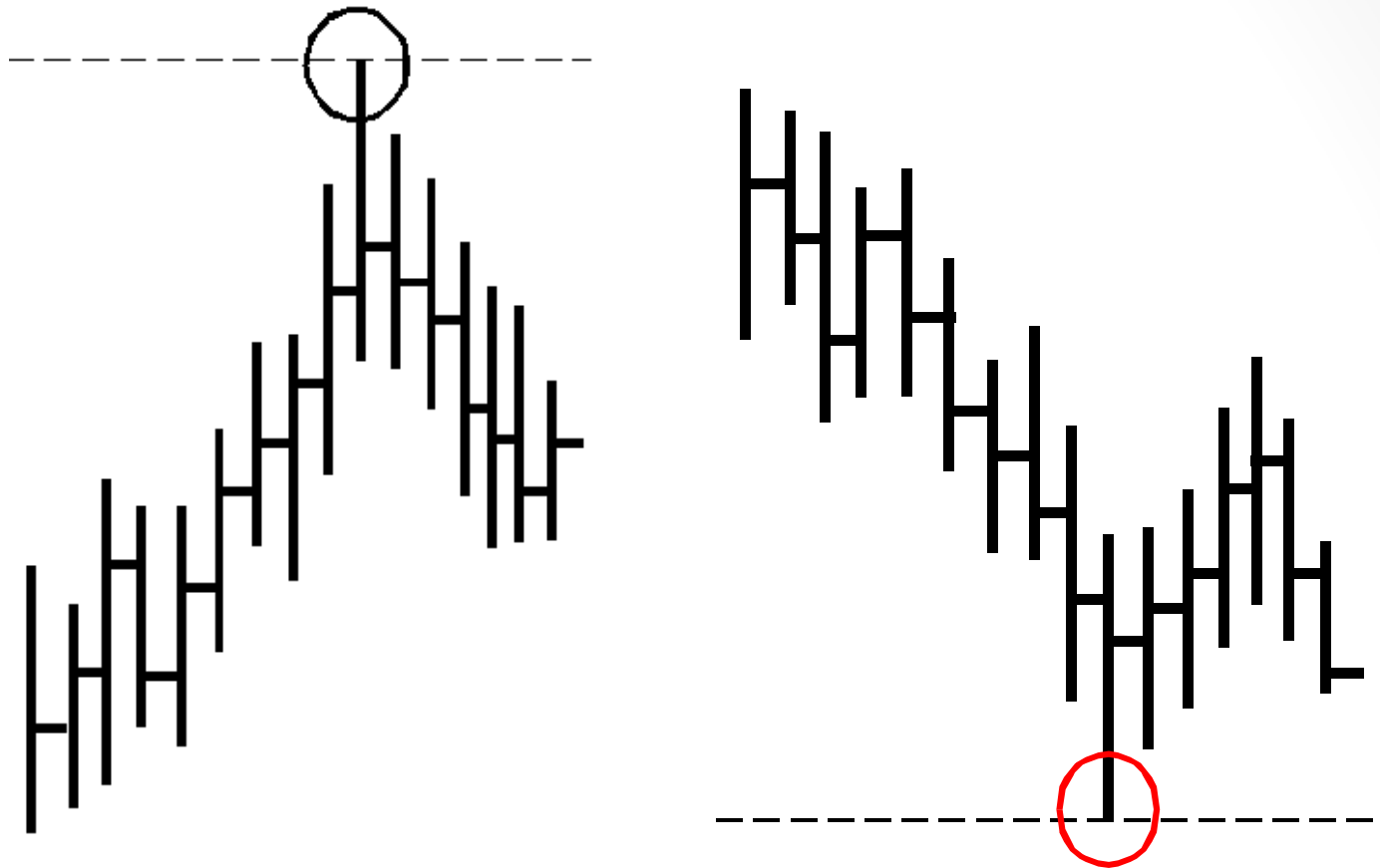
Monthly Continuation, Corn, 1997-2017



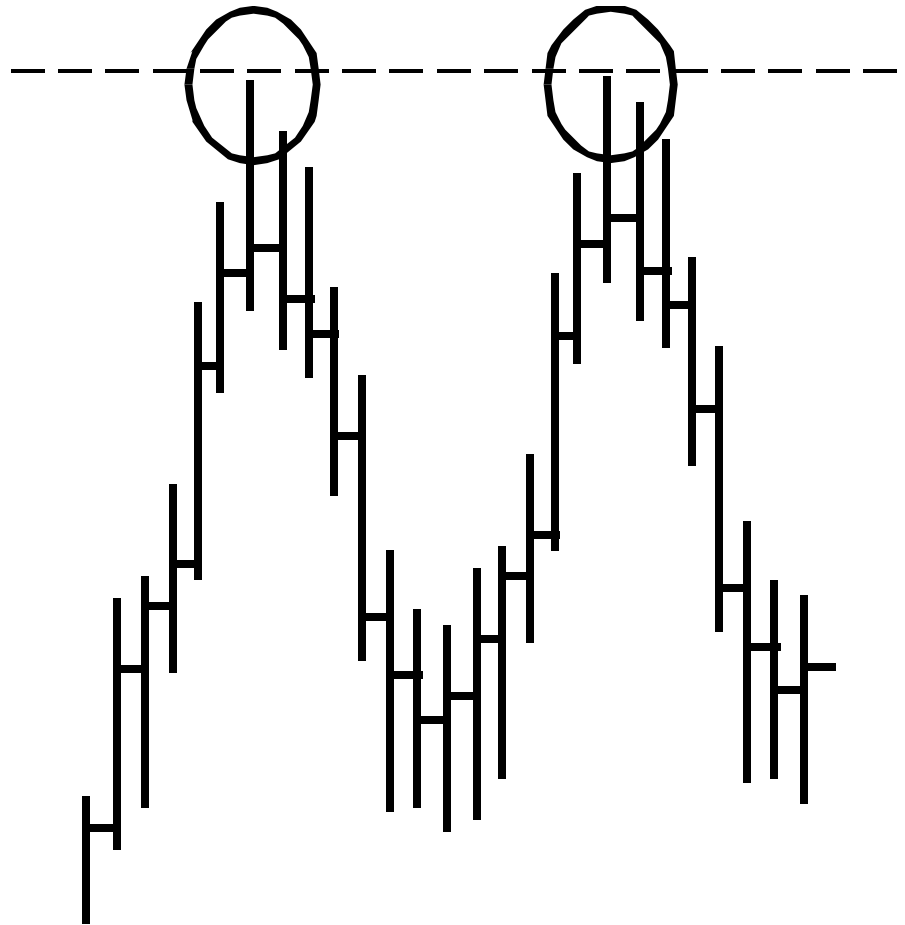
Support and Resistance

- Resistance – Flat line along tops
- Support – Flat line along bottoms
- Life of contract high/low, double or multiple tops, Fibonacci retracements can be particularly significant

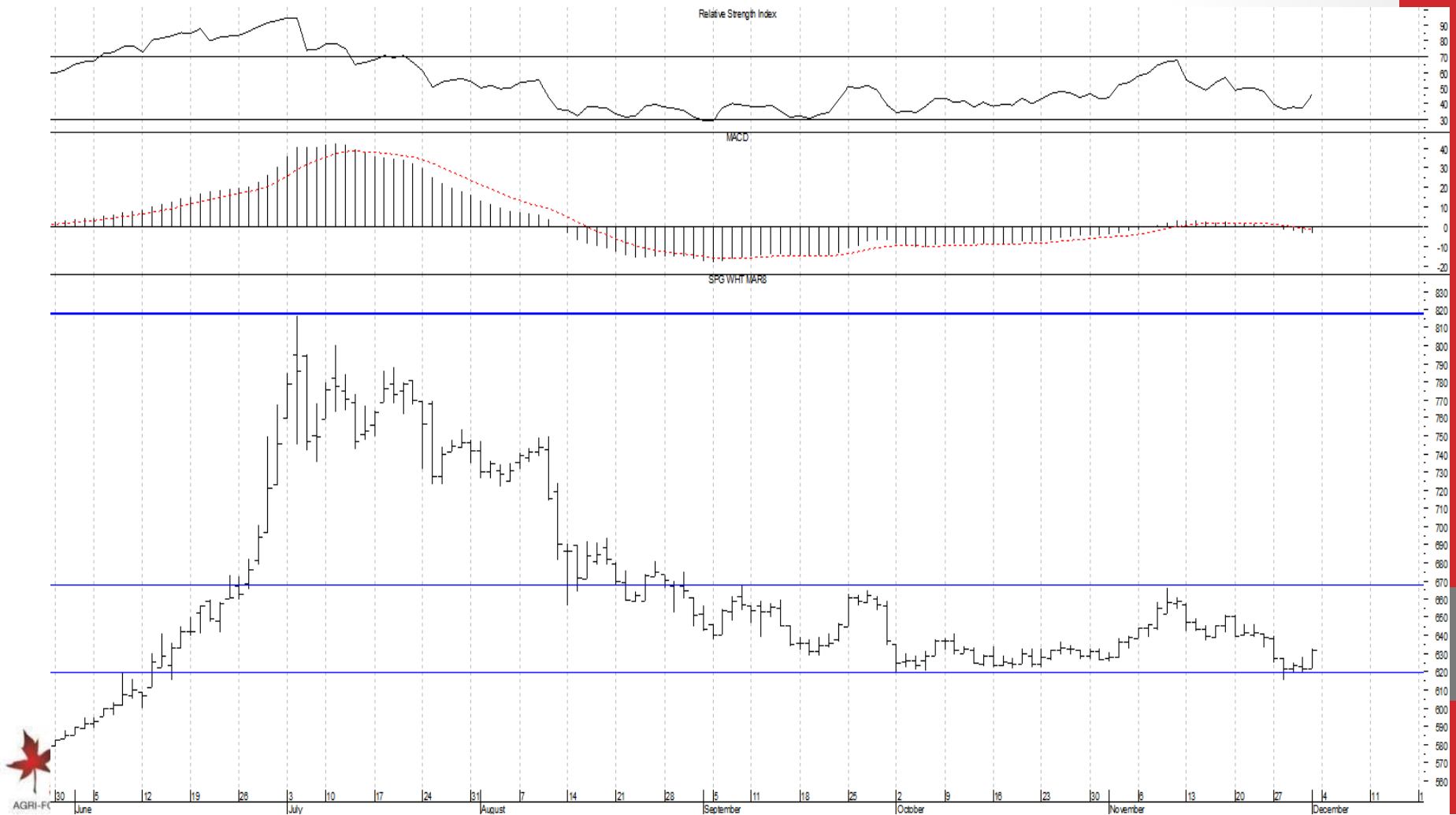
Stylized Resistance and Support at Contract Highs and Lows



Double Top



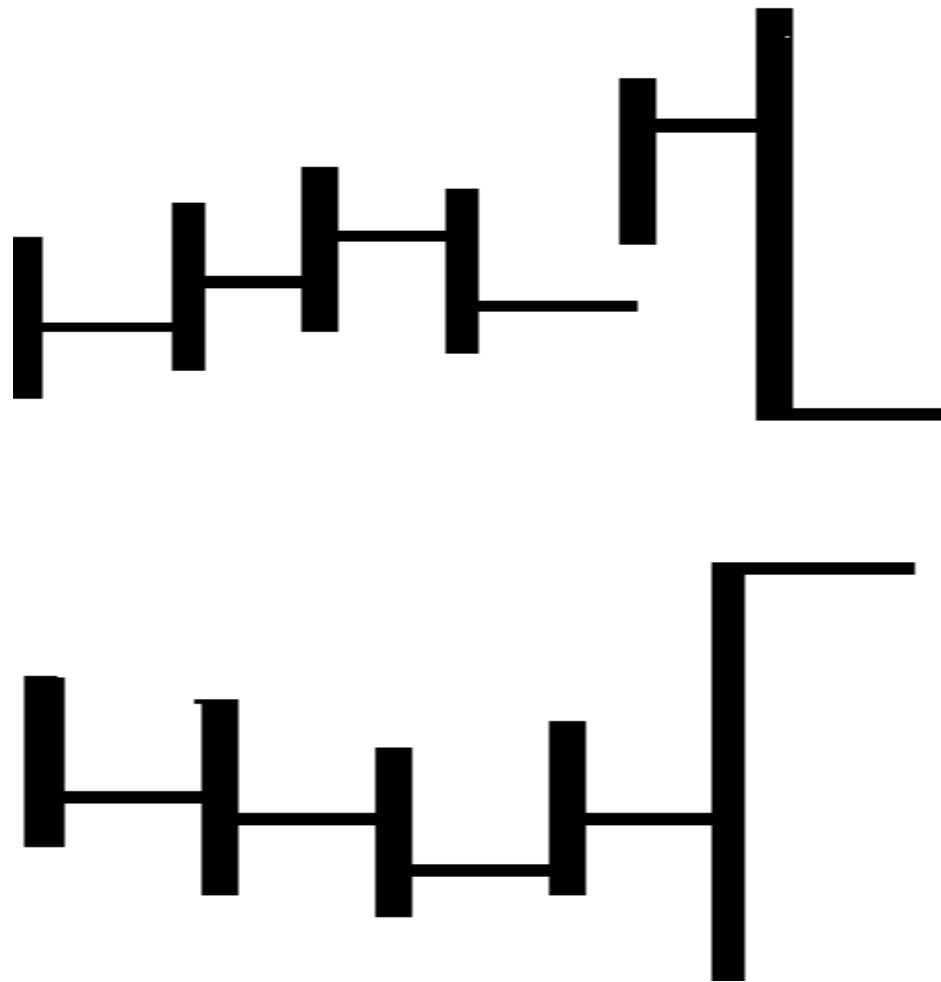
March Spring Wheat Future – Multiple Bottoms and Tops



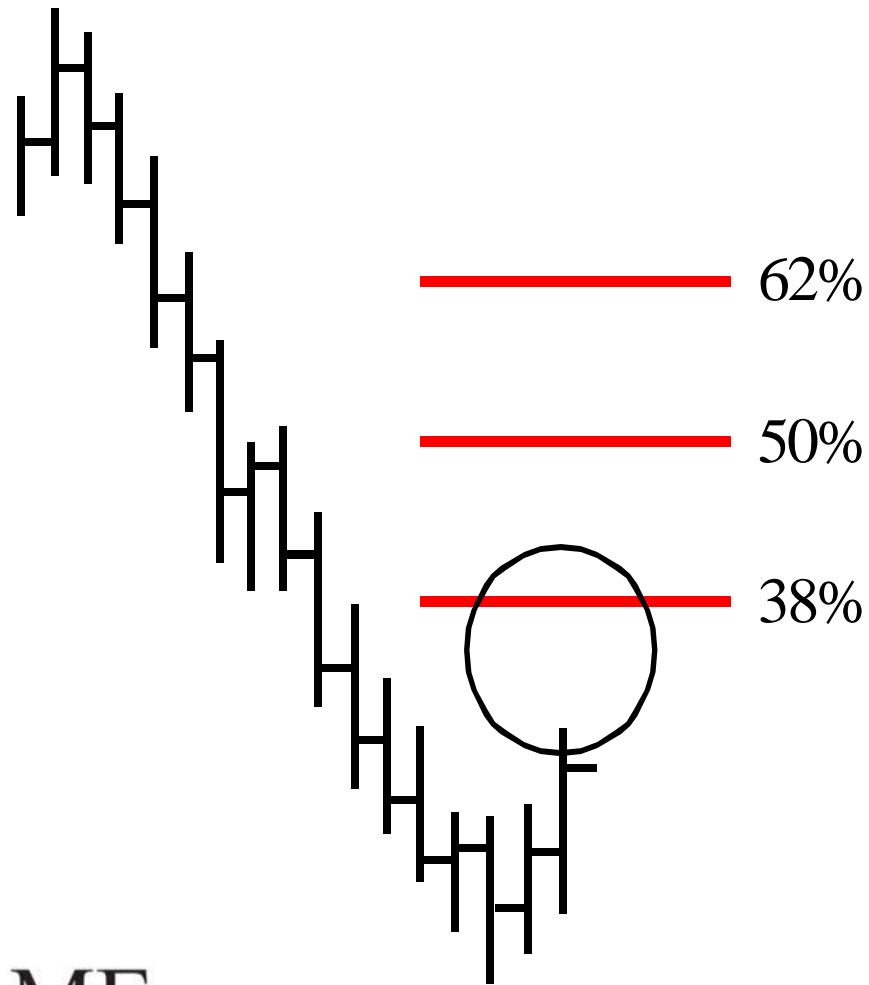
Key Reversals

- Tops – contract high, outside day, lower close
- Bottoms – contract low, outside day, higher close

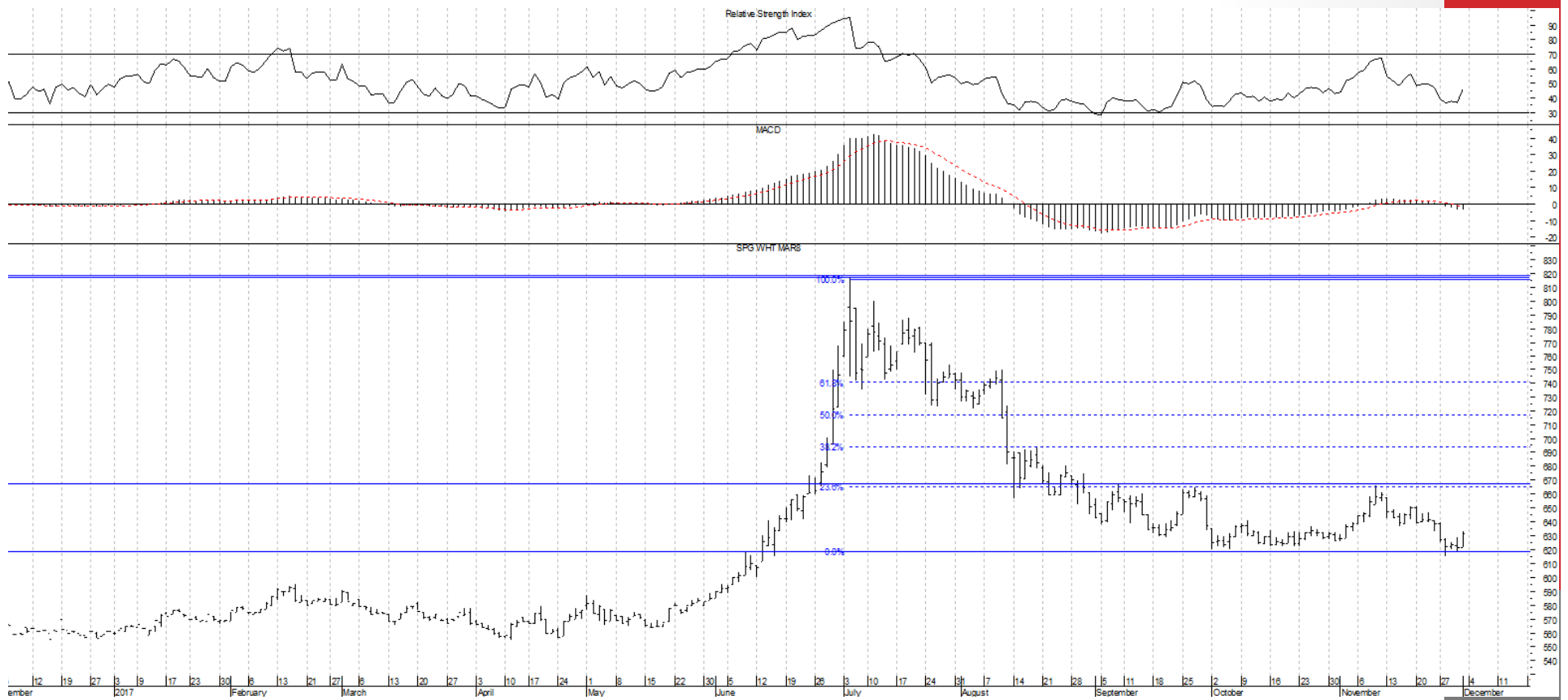
Key Reversal Top and Bottom



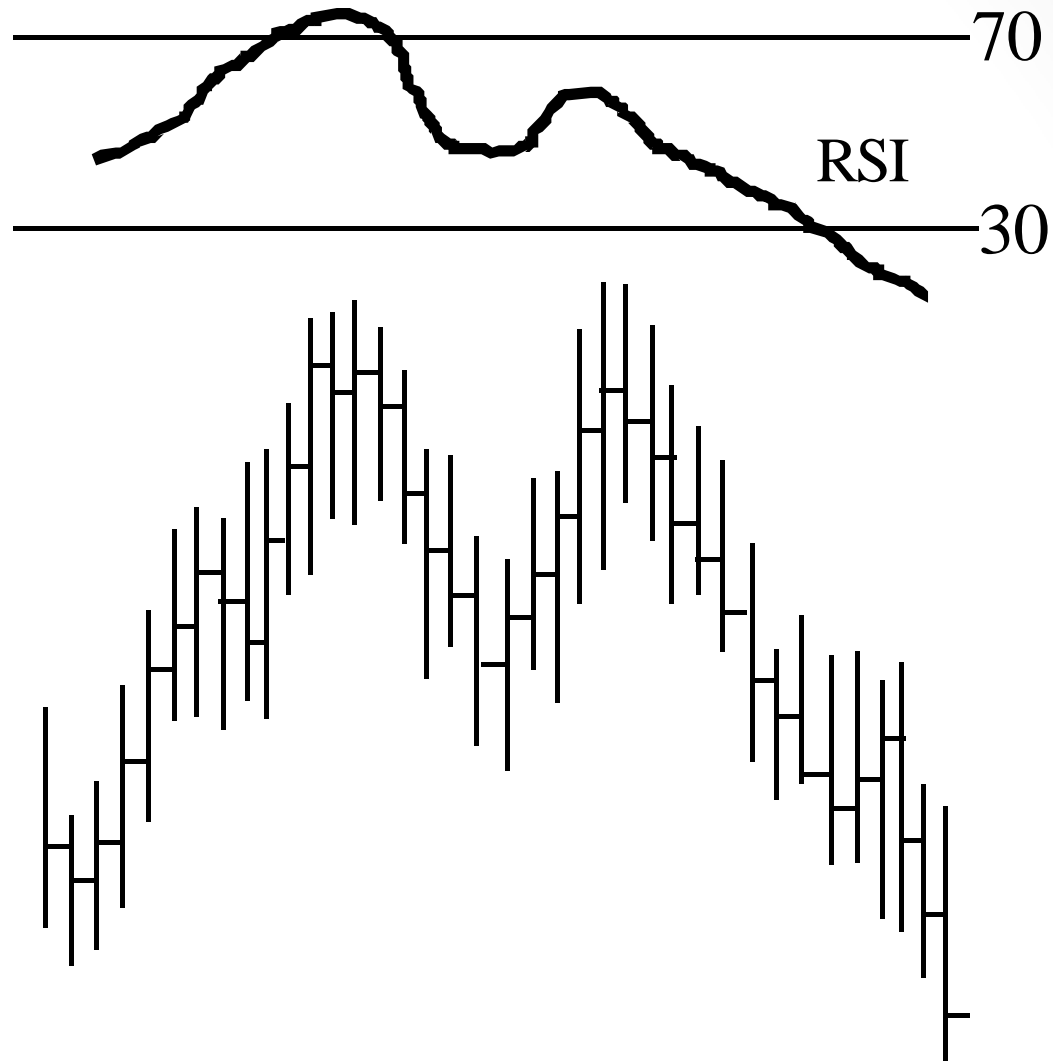
Fibonacci Retracements



March Spring Wheat, Multiple Tops and Bottoms, Fibonacci



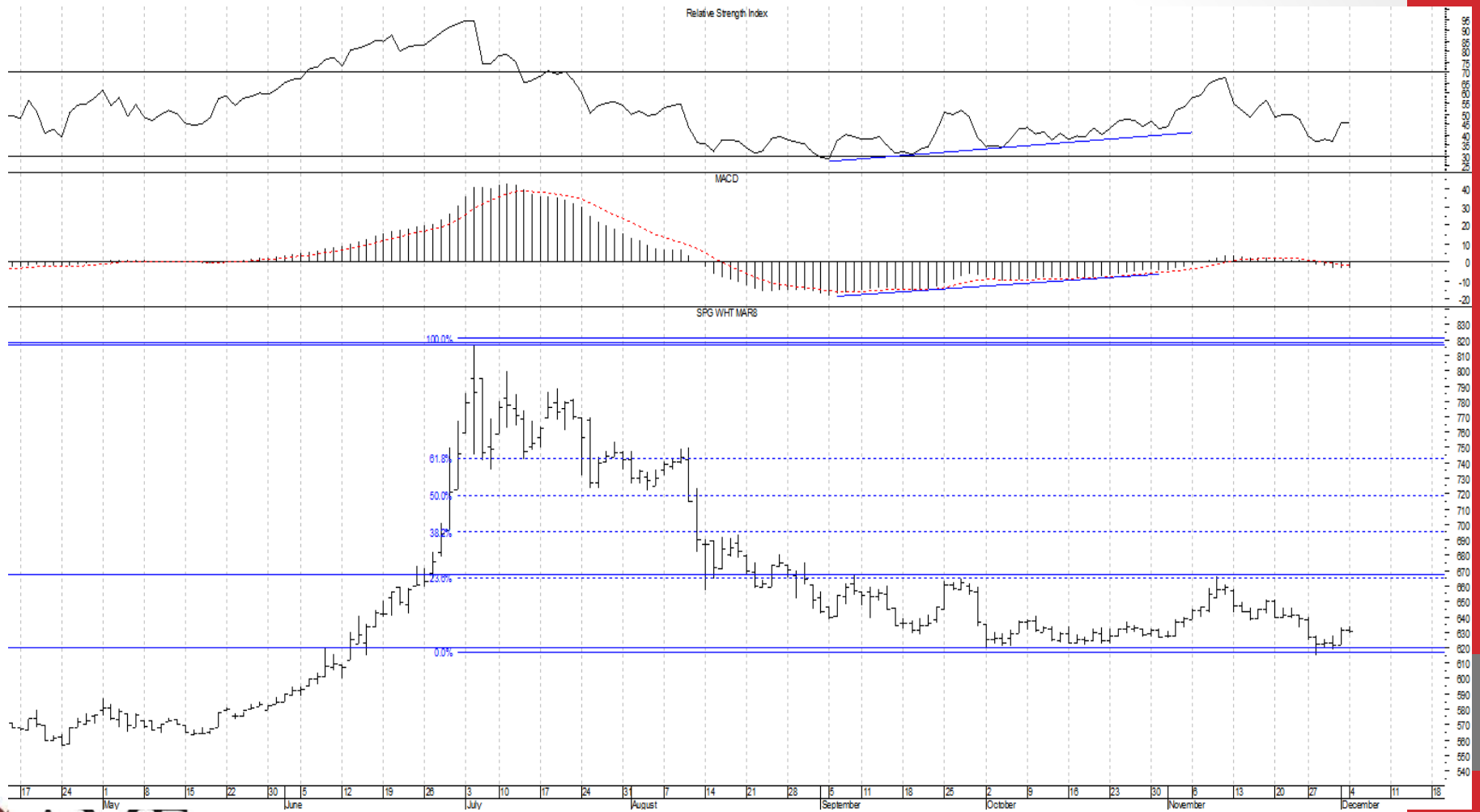
Relative Strength Index with Failure Swing



RSI is Based on 14 Days' Prices

- MACD is based on more than 26 days – longer term
- We use both to determine divergence and help understand if we have a top or bottom

March Spring Wheat Bottom: Diverging on RSI and MACD



The “Fundamentals of Technicals”

- When a market has several months in a channel like wheat,
 - Interpretation is that no matter what’s come out of the bull or bear bag for four months
 - We can’t justify taking the market outside this \$.50 range

Break Outs

- Once significant resistance or support is on the chart, then a change in fundamentals is reflected in a break out.
- Break out: two consecutively higher (lower) closes above (below) resistance (support), especially on heavy volume and no divergence.
- With wheat, poor weather in SA or winter wheat area could take it higher, good weather, poor US export demand could take it lower.

Applying These Concepts to the Lean Hog Market

- Used July 08 Future or Futures Option
- Suggest using it on a portion of hogs. One futures contract = 214-220 hogs
- Selling futures (Short) now in Dec is a temporary substitute for selling hogs in July in the cash market. Can buy back any time until July.
 - Buying back lower is a profit and offsets potential loss on a lower cash market
 - Buying back higher is a loss and offsets potential gain on a higher cash market

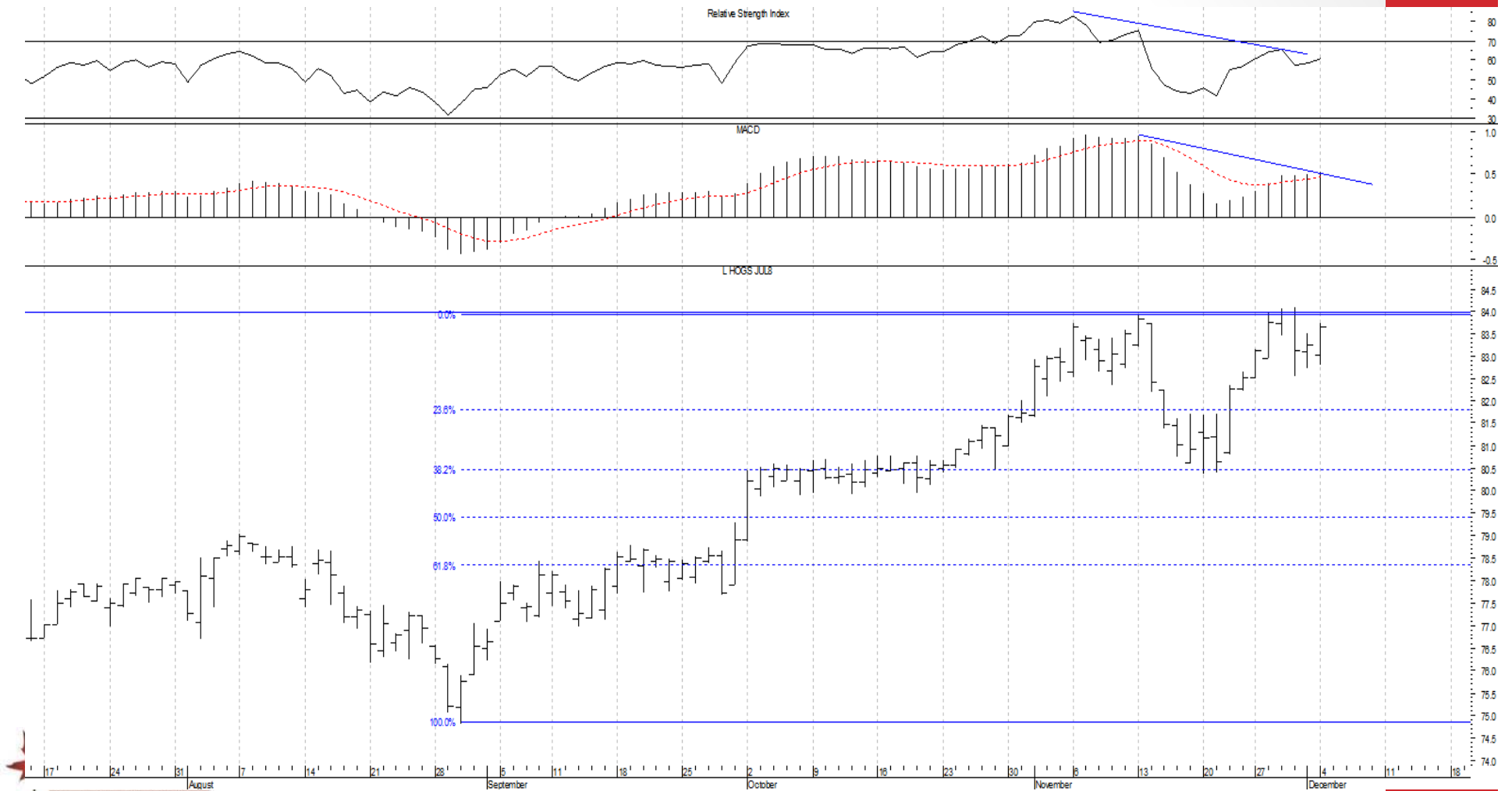
Applying These Concepts to the Lean Hog Market

- Buying a Put is a substitute for selling futures.
- If you buy an \$84 Put, the seller promises to give you a Short future at \$84, if you want it (like if the market goes to \$74) but not if you don't want it (like if the market goes to \$94)
- It's like insurance and you pay the writer a negotiated premium for it.

July Hogs on Dec 2

- Multiple tops at \$84
- Near highs of 2015, 16 and 17
- Major divergence on both RSI and MACD
- Weak key reversal on Nov 30 at \$84.10 high

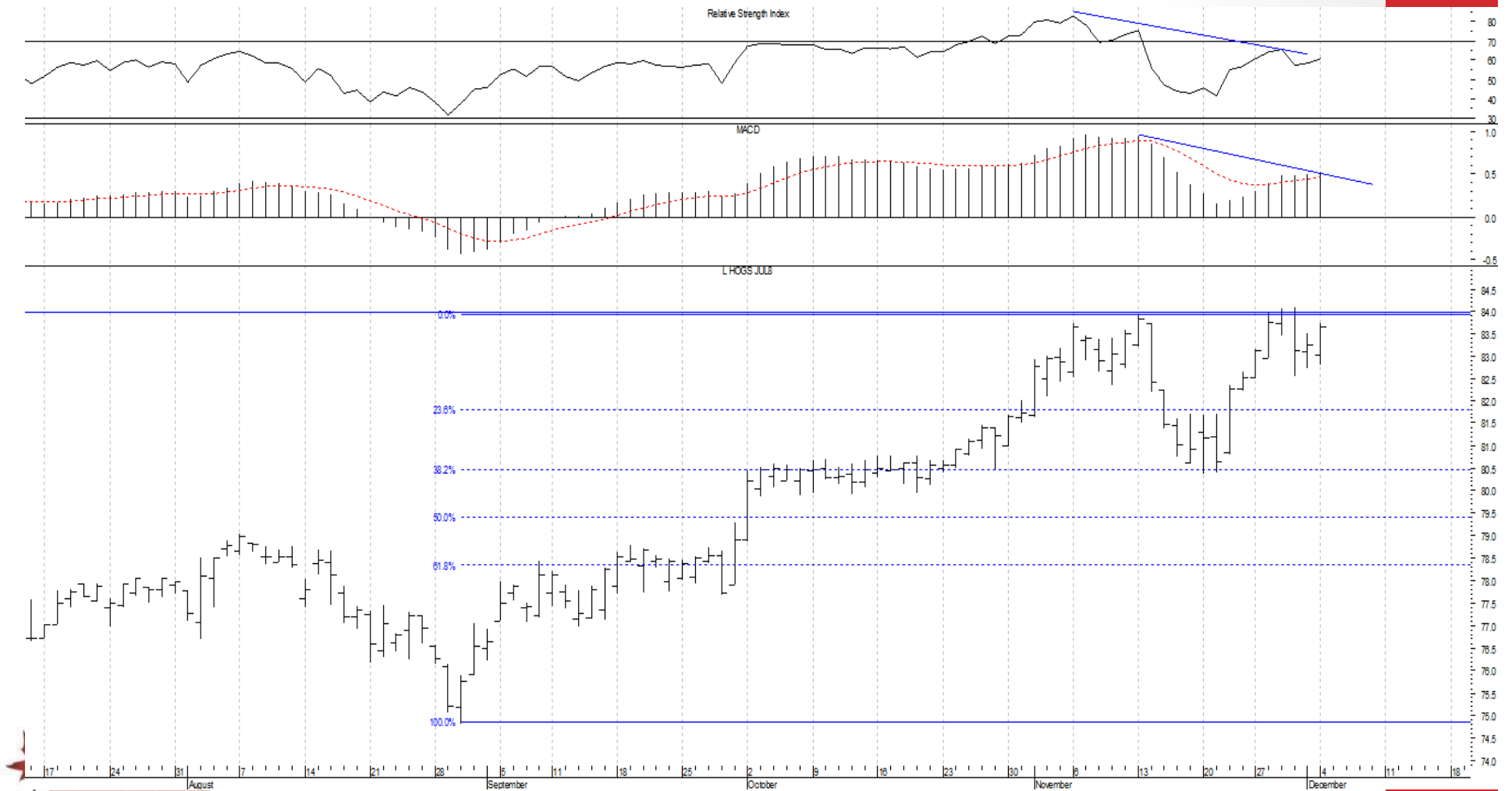
July Lean Hogs, Dec 2.



Trading Rules to Manage Risk: Beginning of December Chart

- Alternative 1. Do nothing because the bull bag says the market is going to go higher!
(Disregarding the bear bag)
- Alternative 2. If you like the basis, forward contract some of your pigs based on \$84,
 - and be assured of a good price on those pigs without having to worry about futures and options. (use the chart, not the market)

July Lean Hogs, Dec 2.



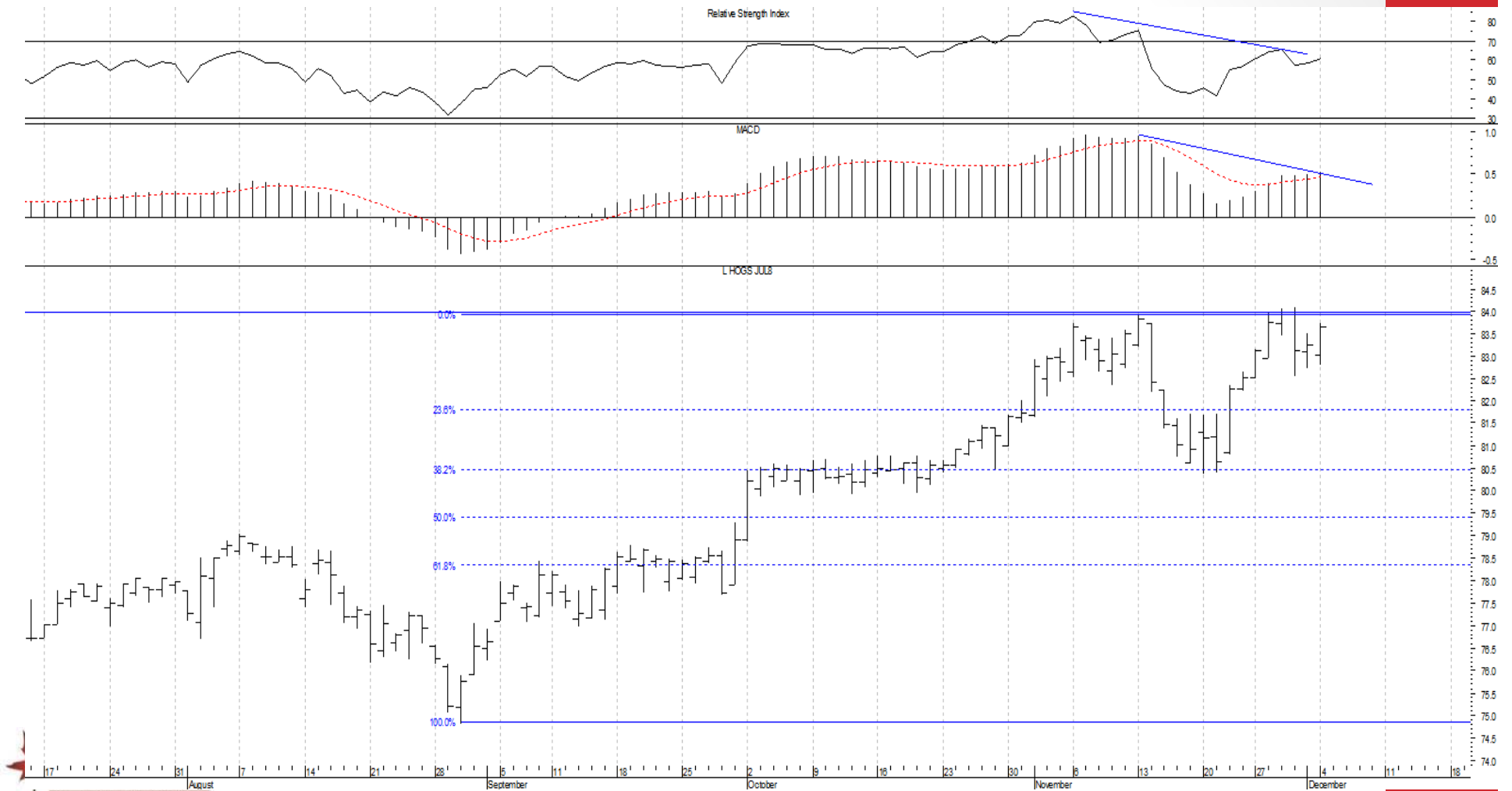
Trading Rules to Manage Risk: Beginning of December Chart

- Alternative 2A. The risk of contracting here is that you get priced too low.
 - Forward contract and buy Calls. Rule: Puts and Calls are cheap insurance if their premium is 3% or less of the strike price. The 38% Fibonacci projection from \$84 would suggest an \$88 Call, which is currently trading for \$2.30. = 2.6%
 - Buy the Call to protect against a major bull market (setting a floor of \$84 - \$2.30 +/-Basis)

Trading Rules

- Alternative 3. Sell futures now. locks in a good price in a falling market
 - Risk is you will get priced too low and pay margins. This can be addressed with the breakout rule– ie “buy stop” on your short position on two consecutively higher closes than \$84.10.
- Does the same thing as Alternative 2A, except will cost nothing if this is the high and futures drop.
 - May or may not be less costly than the option strategy depending on where the second close is.
 - If you do get stopped out, you need a re-entry rule.

July Lean Hogs, Dec 2.



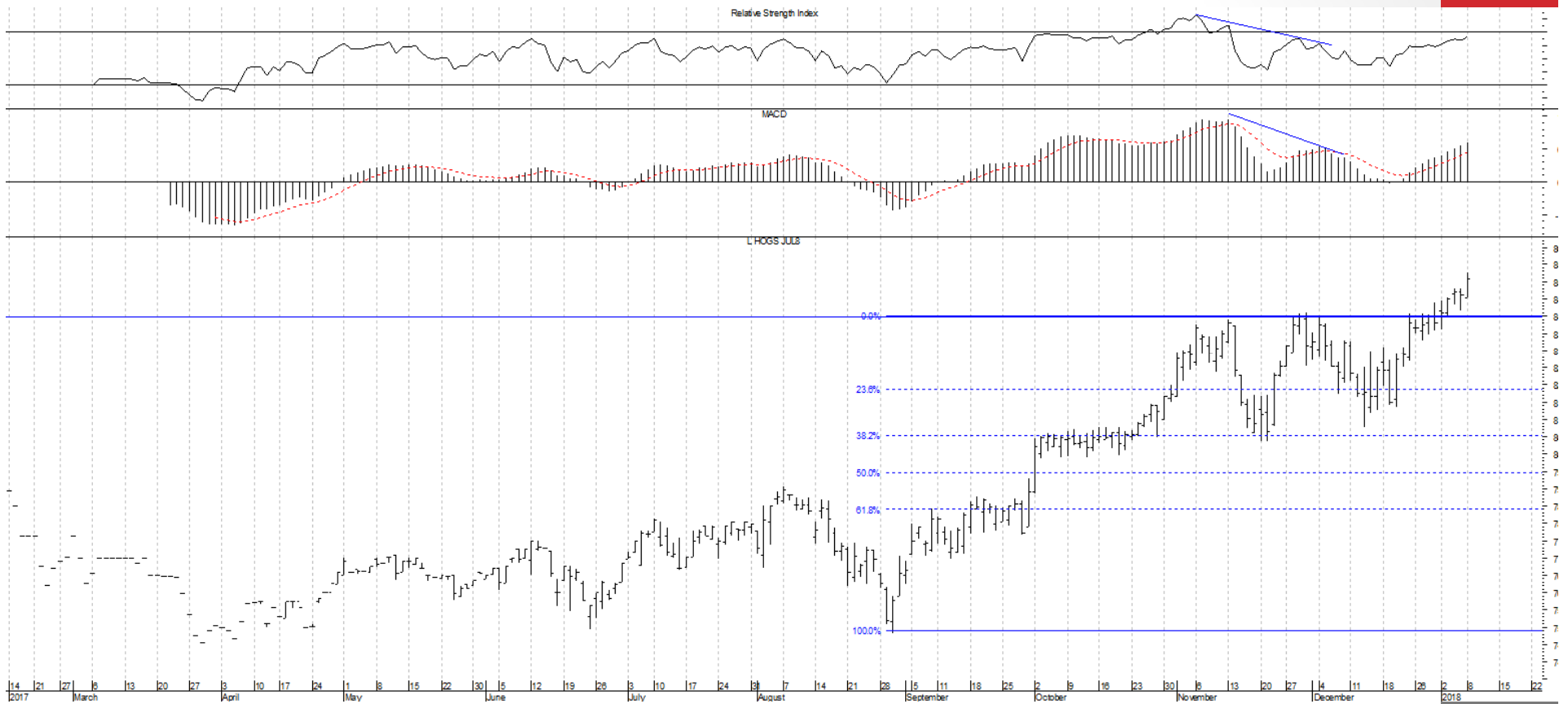
Trading Rules

- Alternative 4. Place a floor under the price: by buy Puts. We use the Fibonacci's and 3% to determine which Put
 - The 38% retracement would suggest an \$80 Put, currently $\sim \$3.20 > 3\%$
 - So move down to a \$78 Put, = $\sim \$2.50$. This would give you a \$75.50 floor and let you speculate that the cash market will go higher.

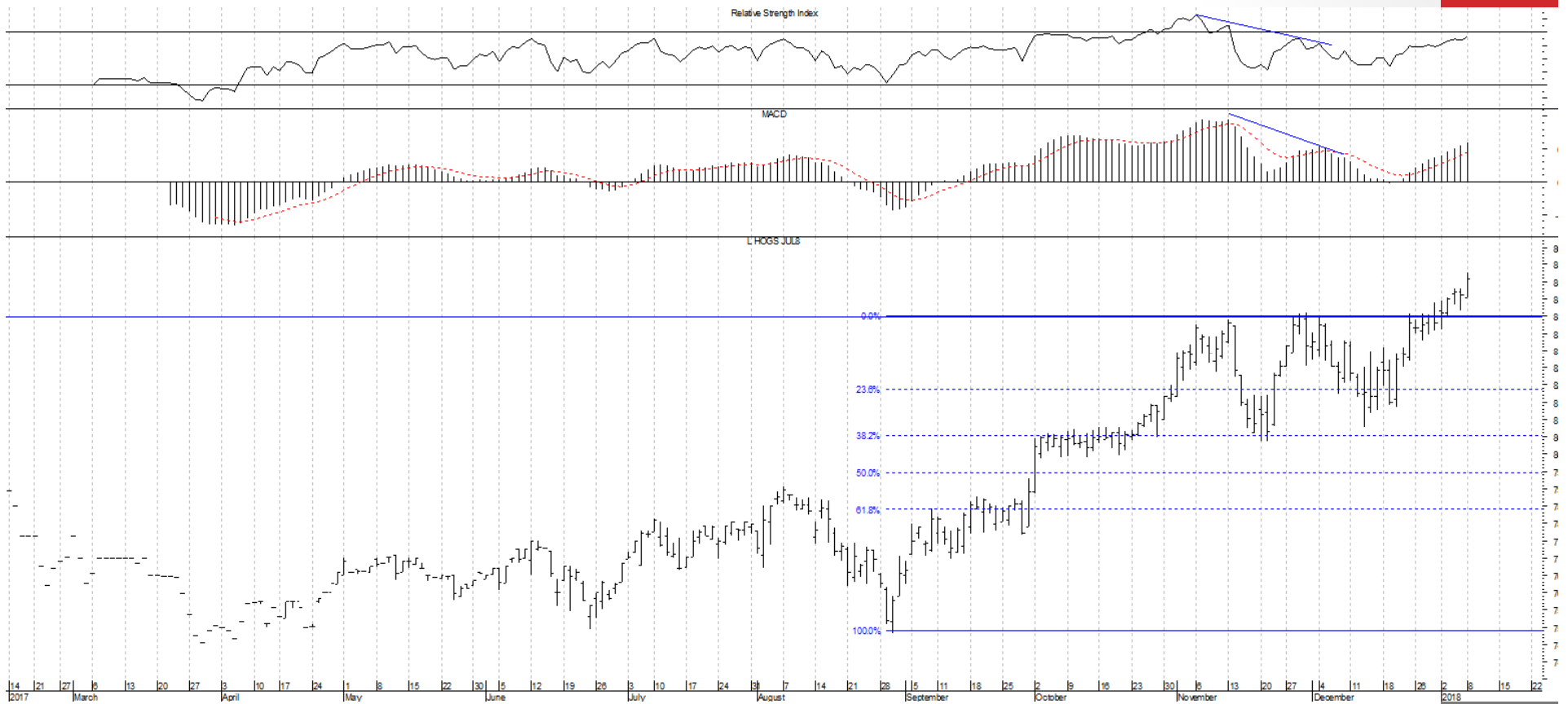
So, Where Are We on January 8?

- Doing nothing was the best outcome because the market broke out last Thursday
- Alternative 2: Forward Contract = Fixed Price ~ \$84
- Alternative 2: Forward Contract + \$88 Call has increased in value to \$3.125 (From \$2.30)

July Lean Hogs, January 7



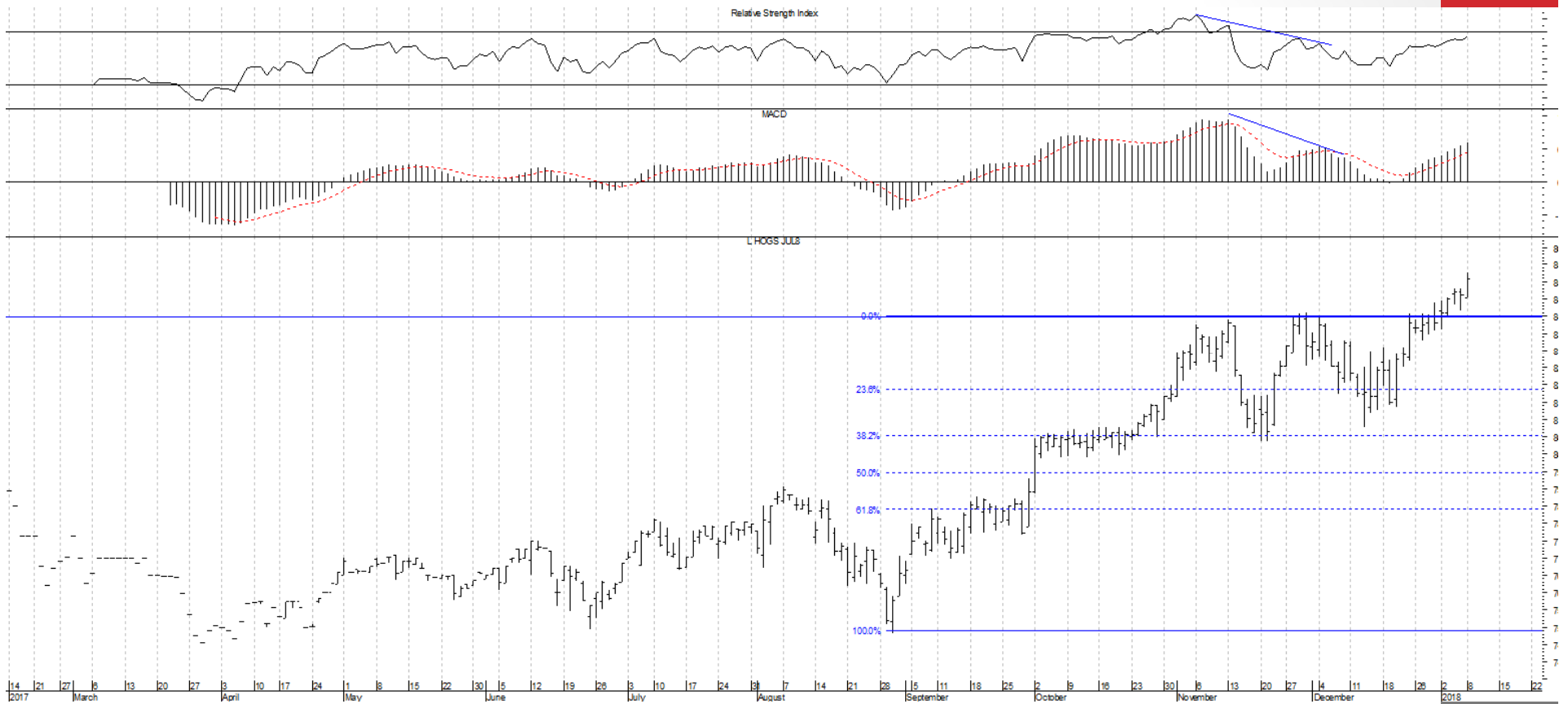
July Lean Hogs, January 7



So, Where Are We on January 8?

- Alternative 3: Sell Futures with buy stops. The futures position would have been stopped out on Thursday at \$84.70 for a small loss (if sold at \$83.50, loss of \$1.20).
 - If following strategy 3, you need a re-entry rule
 - A. if market continues to rise, look for top again at a Fibonacci projection \$86, \$87.50, or \$88.50 and sell again
 - B. if market goes back down, sell again below \$84.10, use the new high for stops.

July Lean Hogs, January 7



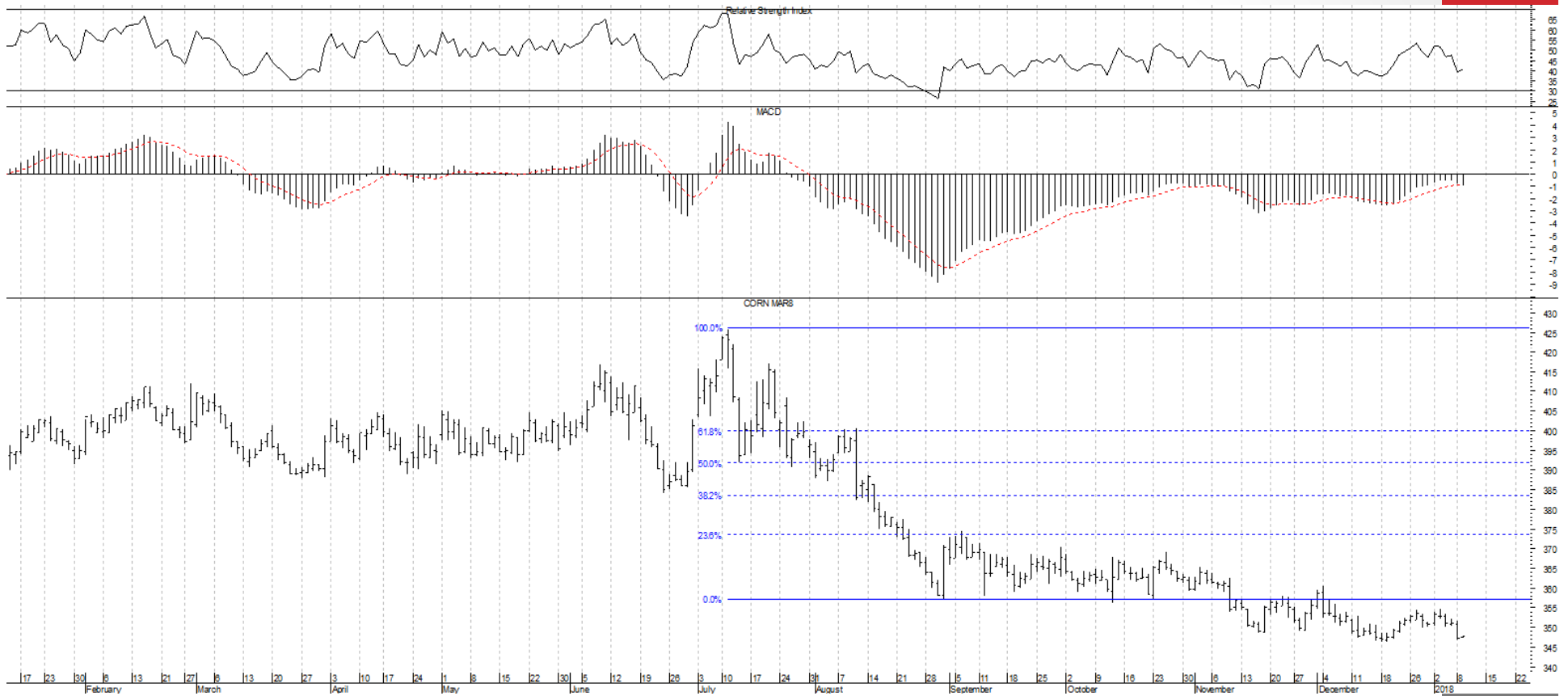
So, Where Are We on January 8?

- Alternative 4: Buy Put Options
 - Floor is still in place, \$78 Put is down to \$1.98 (from \$3.20)
 - Eventually consider rolling up to \$84 Put if market continues to rise (or pull the trigger on one of the other Alternatives).

Can Use In Reverse for Purchasing

- We have been suggesting \$3.70 or \$3.80 corn Calls and buy in the spot market for some time.

March '18 Corn Futures, 8 Jan, 2018



Summary

- Forces me to take a view of where the market is relative to it's recent past – helps identify highs and lows
- Can be used for forward contracting, don't need to use futures and options to get value from the chart.
- Obviously, not always going to be right, but
 - Helps identify places with high probability of doing well on futures or options
 - Helps reduce “losses” by limiting margin payments,
 - Or
 - Helps retrieve some of any price appreciation after contracting with Calls
 - Gives disciplined decision rules that keep losses fairly small