

# Price Forecasting

Fundamental and Technical Analysis

# Fundamental Analysis

Fundamental analysts assess commodity price implications by evaluating supply and demand variables. These include:

- Seasonal Use Patterns
- Seasonal Supply Patterns
- Price of Substitute Goods
- Price of Compliment Goods
- Market Structure (how many buyers and sellers)

# Strategy

Using economic theory, predict the (usually) long-run market clearing price. If the asset is overvalued relative to the expected market clearing price, then the asset is sold. If it is over valued, it is bought.

The result is a long-run approach to price forecasting.

# Hypothesis

Every asset has some intrinsic value or price

- Econ: equilibrium or market clearing price
- Finance: Fair market value

However, because market forces are complex and ever changing, prices can be distorted. This can result in an asset being over or under valued at any given point in time.

# Demand Factors

- Current Price Level
- Prices of substitutes or compliments
- Income
- Exchange Rates
- Trade Agreements
- Government Programs

# Supply Factors

- Factors of Production
- Inventory Levels
- Carryover
- Government Programs
- Production in other Countries
- Weather

# Approaches to Fundamental Analysis

- Intuitive Analysis

Use a basic understanding of economic principles to hypothesize about prices

- Quantitative Analysis

Combine knowledge of economic theory with mathematical and statistical techniques to establish explicit relationships between economic variables and prices.

**US Corn Balance Sheet (Sep/Aug)**

12/05/00

Marketing Year	USDA	USDA	USDA	USDA	USDA	USDA	USDA
	95/96	96/97	97/98	98/99	99/00	OCT 00/01	NOV 00/01
<i>Million Bushels</i>							
<b>Beg Stocks</b>	1,558	426	883	1,308	1,787	1,715	1,715
<b>Imports</b>	16	13	9	19	15	10	10
<b>Acres Planted</b>	71.2	79.2	79.5	80.2	77.4	79.6	79.6
<b>Acres Harvested</b>	65.0	72.6	72.7	72.6	70.5	73.0	73.0
<b>% Harvested</b>	91.3%	91.7%	91.4%	90.5%	91.1%	91.7%	91.7%
<b>Yield</b>	<b>113.5</b>	<b>127.2</b>	<b>126.6</b>	<b>134.4</b>	<b>133.8</b>	<b>139.6</b>	<b>137.7</b>
<b>Production</b>	7,374	9,233	9,207	9,759	9,437	10,192	10,054
<b>Total Supply</b>	<b>8,948</b>	<b>9,672</b>	<b>10,099</b>	<b>11,085</b>	<b>11,239</b>	<b>11,917</b>	<b>11,779</b>
<b>Feed &amp; residual</b>	4,696	5,302	5,505	5,496	5,676	5,850	5,850
<b>Food/Seed/Ind.</b>	1,598	1,692	1,782	1,822	1,913	1,975	1,975
<b>Exports</b>	2,228	1,795	1,504	1,981	1,935	2,275	2,275
<b>Total Demand</b>	<b>8,522</b>	<b>8,789</b>	<b>8,791</b>	<b>9,298</b>	<b>9,524</b>	<b>10,100</b>	<b>10,100</b>
<b>Ending Stocks</b>	426	883	1,308	1,787	1,715	1,817	1,679
<b>Stocks To Use</b>	<b>5.00%</b>	<b>10.04%</b>	<b>14.88%</b>	<b>19.22%</b>	<b>18.01%</b>	<b>17.99%</b>	<b>16.62%</b>
<b>Avg. Farm Price</b>	<b>\$3.24</b>	<b>\$2.71</b>	<b>\$2.43</b>	<b>\$1.94</b>	<b>\$1.80</b>	<b>\$1.85</b>	<b>\$1.90</b>

# Leading Indicator Models

Assume prices do not respond immediately to new information. Attempt to determine the final price response, and how long it will take.

Indicator

Market

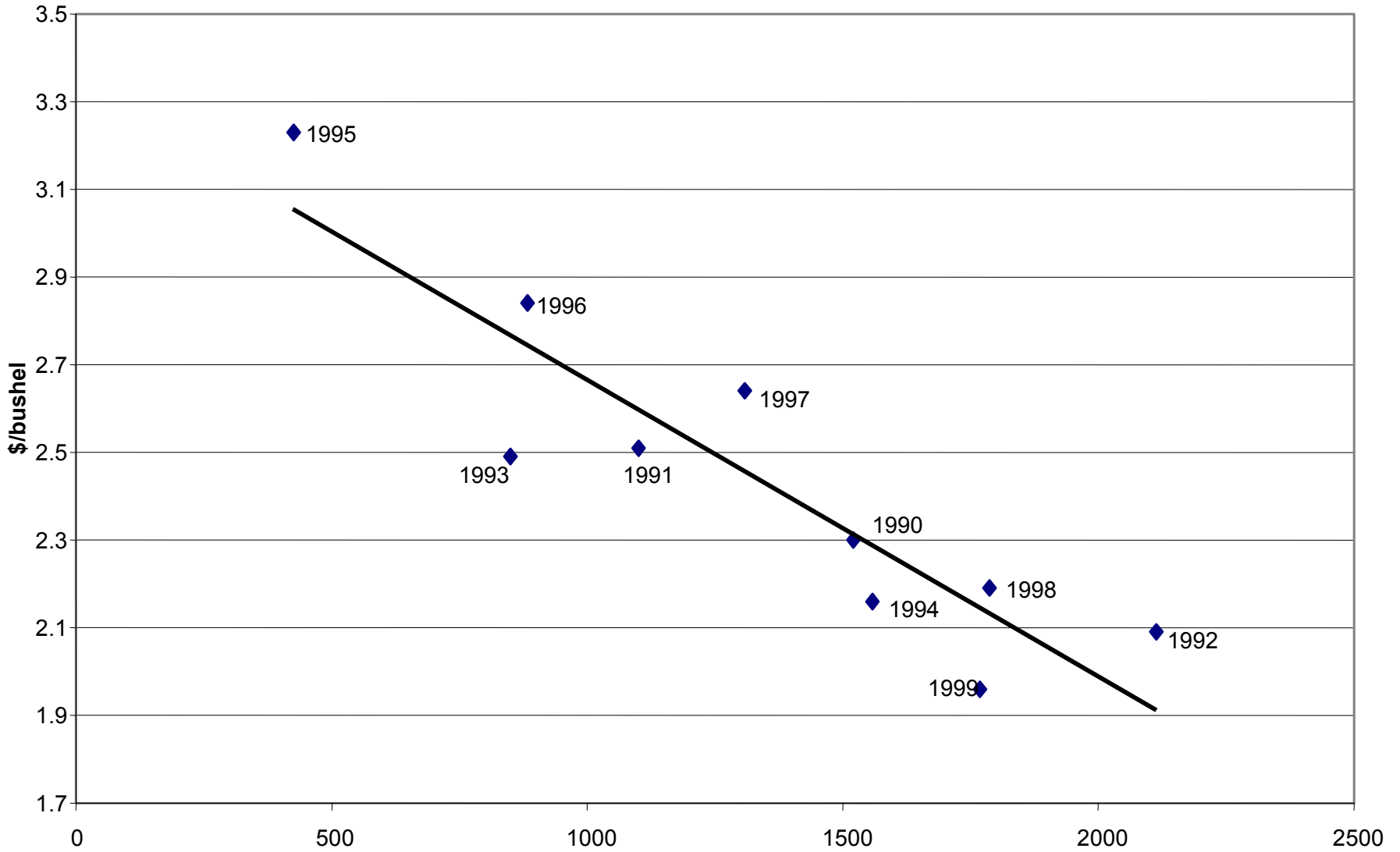
USDA Crop Production

Soybeans

UDA Cattle on Feed

Cattle

### November Price - Dec Futures vs. Ending Stocks



In October, USDA estimated the 2000/01 corn carryout would be about 1.8 billion bushels. At that time the price for December corn futures was less than \$2 per bushel. Using historical relationships, a 1.8 billion bushel carryout implies an average price in November for December corn futures of \$2.10 per bushel.

RN-00Z-Daily 12/04/2000 C=209^3 A1 O=210^0 H=210^3 L=209^0 V=0



# Summary

Fundamental forces are those that deal with the basic concepts of supply and demand. Fundamental analysis applies the understanding of these relationships to the expected price formation of a commodity. However, the price forecast is only as good as :

- 1) the basic understanding of underlying economic conditions, and
- 2) the ability to accurately anticipate changes in current economic conditions.

# Technical Analysis

Technical analysts assess commodity price implications by evaluating past prices and market activity (trade volume and open interest).

# Strategy

Using past prices and market activity levels, predict the (usually) short-run variations in price.

The result is a short-run approach to price forecasting. It addresses the question “how will we get to the market equilibrium price?”

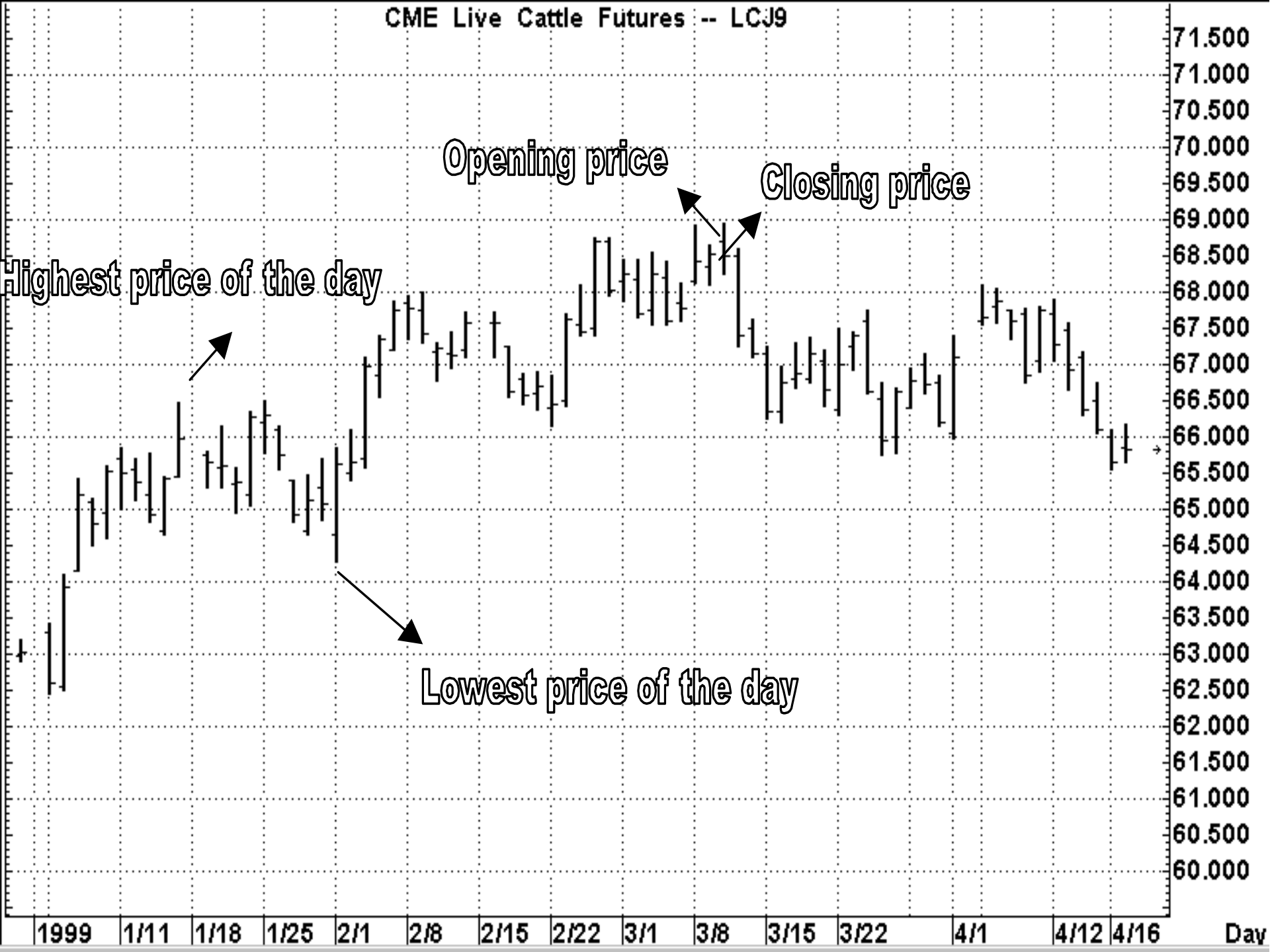
# There are an infinite number of ways to measure past price performance

- Bar Charts
- Lines of Support and Resistance
- Consolidation Planes
- Key Reversals
- Price Gaps
- Moving Averages

# Bar Chart

- Price is plotted on the vertical axis
- A time interval is plotted on the horizontal axis
- The bar chart plots the range of price experience over the time interval

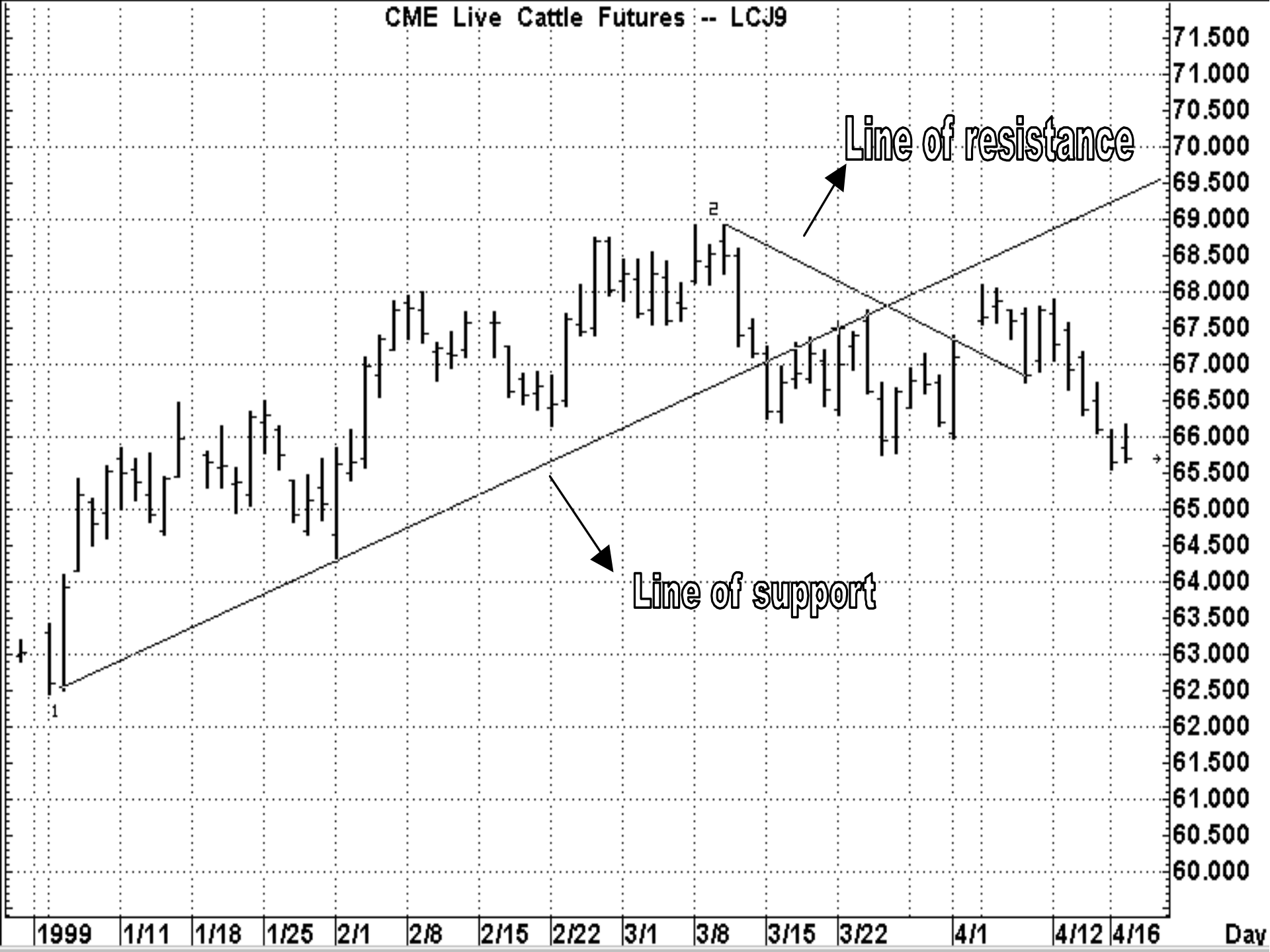
# CME Live Cattle Futures -- LCJ9



# Trend Lines

- Used to get more specific information from a bar chart. Estimates the exact price at which a trend reverses.

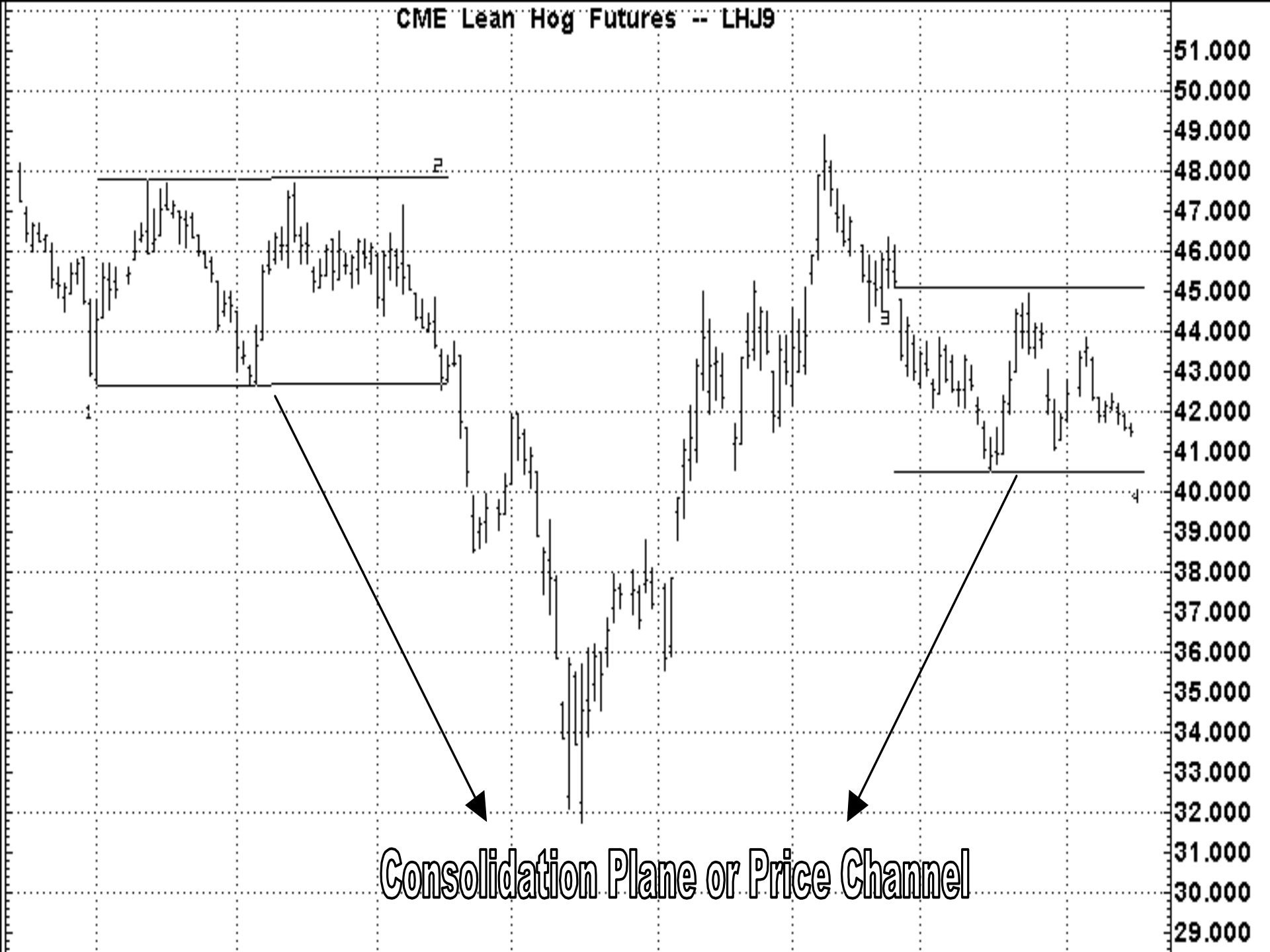
# CME Live Cattle Futures -- LCJ9



# Consolidation Planes

- Identifies an expected trading range when no trend is present (sideways market).  
Traders buy at the bottom and sell at the top of the range until the pattern is violated.

# CME Lean Hog Futures -- LHJ9



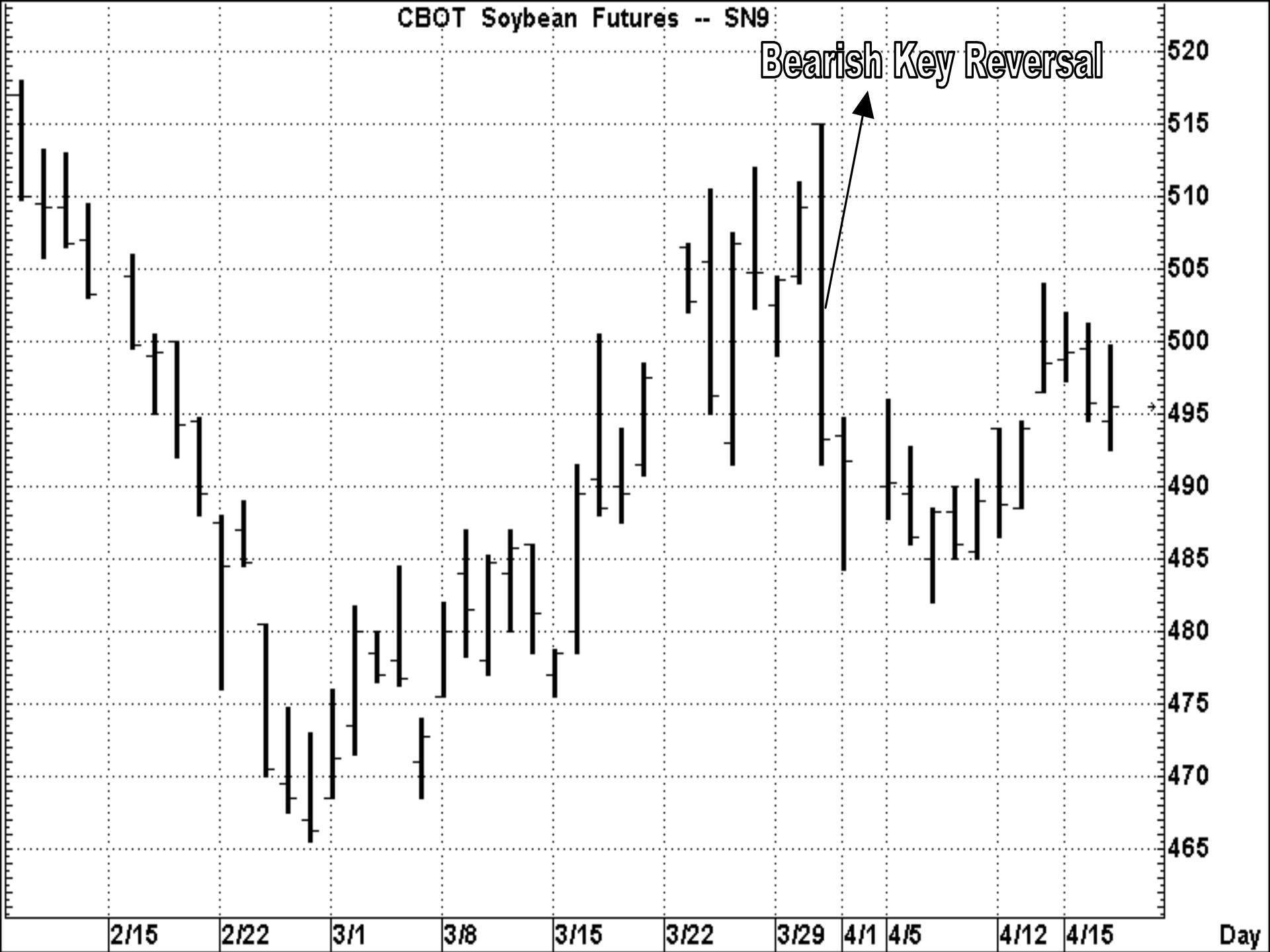
Consolidation Plane or Price Channel

# Key Reversal

Indicates a change in trend. Also called an outside day because the extreme price (high and low) are both outside the previous day's trading range.

# CBOT Soybean Futures -- SN9

Bearish Key Reversal



# Gaps

Reflects a strong change in the supply/demand assessment of the market, or a change in the general interpretation of existing market information.

Two interpretations:

run from the gap

fill the gap

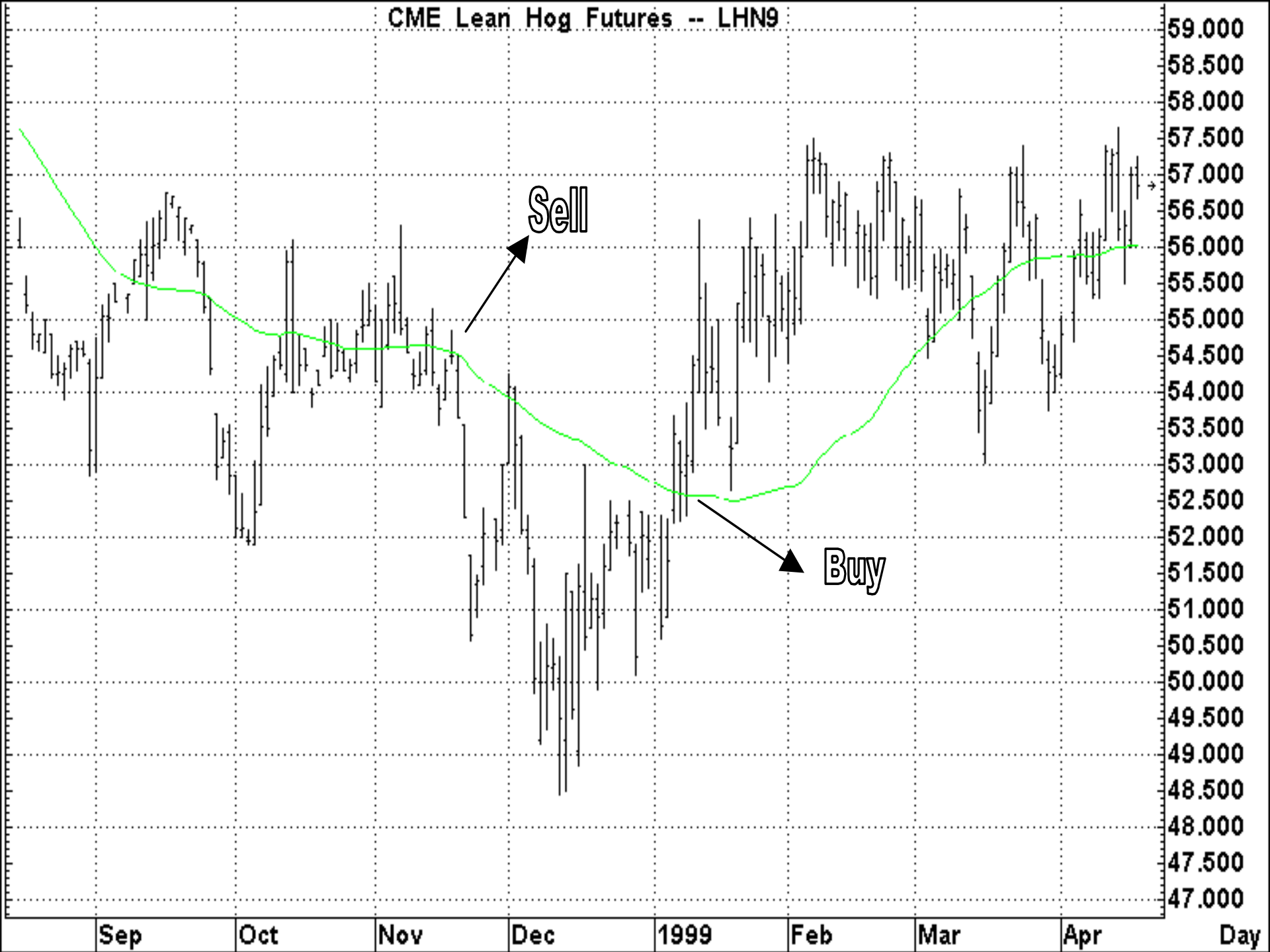
# CBOT Soybean Futures -- SN9



# Moving Averages

Attempt to smooth out daily price fluctuations so an analyst might get a better idea of the underlying trend. Trading signals are generated when prices cross the moving average.

# CME Lean Hog Futures -- LHN9



# Summary

Technical analysis can be a powerful tool in picking market entry and exit points, but:

- Selecting the time frame over which an indicator is generated is completely arbitrary BUT critical. In general, the longer the time frame the accurate the signal, but the less often there will be a signal.
- Technical rules can be self-fulfilling which is NOT indicative of some irreversible market rule.
- Most technical traders look at a whole portfolio of indicators. Focusing on just one is extremely dangerous.