MIDTERM NOTES

Kyla Lazatin
Period 2
Oct. 16, 2017

Understanding Statistics Video

- Statistics - provides the means to analyze data and then summarize it into numerical form
- Statistical analysis - involves collecting data and analyzing it
- Consumer price index (CPI) - takes a basket of goods and compares its average cost to the cost of the same basket of goods from a year prior.
  - ↳ basket can include food, clothing, transportation, or any product or service an economy consumes
  - ↳ CPI is commonly used to measure changes in the cost of living
- regression analysis - statistical measure that attempts to predict the effect of one variable on another
- other statistical measures investors may use include kurtosis, skewness, and analysis of variance

Rate of Return Video

- the earnings an asset generates in excess of its initial cost
- amount is usually expressed as an annualized percentage rate
- can be calculated based on the cash flows generated by the asset
- rate of return = x% per year + capital gain

$$\text{rate of return} = \left(\text{final asset value} - \text{initial asset value}\right) \div \text{initial asset value}$$

- used to compare similar assets to determine which asset is the better investment

Net Present Value Video

- the value of a specific stream of future cash flows presented in today's dollars
- calculating net present value by comparing initial cost of a project to a total value of future revenue
- NVP's are used to determine whether a project is worth doing
- positive net present values should be carried out, negative net present values should be rejected

Internal Rate of Return Video

- (IRR) = one of the most popular methods of evaluating potential projects
- the higher the IRR, the more valuable the project is
  - ↳ intuitive, quick, simple

Moving Average

- Measure of central tendency
- 50 day vs. 200 day MA
  - ↳ golden cross - 50 day crosses over the 200 day = bullish
  - ↳ death cross - 200 day crosses over the 50 day = bearish

generally a lagging indicator gives the buy/sell signal after the stock price starts to move

Bollinger Bands

- Predict future increases / decreases in prime volitility
  - ↳ pinched together = future higher volitility
  - ↳ pulled apart = future lower volitility
- If stock price crosses above upper band = bearish
- If stock price crosses below lower band = bullish

Relative strength index

- RSI
- indicators = predictors
- 0 - 30 "oversold" = bullish
- 70 - 100 "overbought" = bearish
- 30 - 70 Neutral
- Oscillator = chart below line chart

  0 - 100

  (not an "overlay chart")

Leverage

- Using borrowed capital to purchase an investment

Scenario 1	Scenario 2
$100,000 All cash	$20,000 cash
$120,000 After 1 year	$80,000 loan (5%)
$20,000 Gain	$100,000
ROR = $\frac{20,000}{100,000} = 20\%$	$120,000 After 1 year
No leverage	$\frac{\text{gain } 20,000 - \text{interest } 4,000}{20,000} = \frac{16000}{20,000} = 80\%$
	With leverage

Position

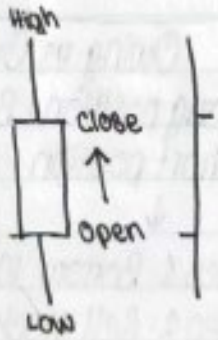
- long position = the traditional view of a stock, buy low and sell high
- short position = form of leverage investment involving borrowing
- steps:
  - ↳ step 1: Borrow 100 shares from IBM
  - ↳ step 2: sell stock at current market price

    $50 × $100 = $5000 cash
  - ↳ step 3: Buy 10 shares @ $30 share — $3,000
  - ↳ step 4: pay back leader "in kind"

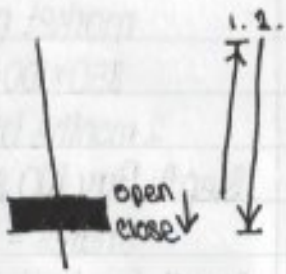
Victor Katona, P3

Stock Market Note

10/14/2017



1) Long Body > Short Body
2) Trend Continues
3) High Volume > Lower Volume
4) Close Near High / Close Near Low
   Bullish Bearish Nuetral



* Lagging Indicator

Indicators - Predictors

Moving Averages (Measures of Central Tendency)
50-day vs. 200-day MA

Golden Cross - 50day crosses over the 200day = Bullish
Death Cross - 200day crosses over the 50day = Bearish

Generally, a lagging indicator gives the buy/sell signal after the stock price starts to move.

Time Series
Chart where time is measured on one of the axis (usually the horizontal axis

Bollinger Band (Measure of Spread/Volitility
- Predict future increases/decreases in price volitility.
- Pinched Together = Future High Volitility
- Pulled Apart = Future Low Volitility
- If stock prices above upper band = Bearish
- If stock price below lower band = Bullish

Relative Strenth Index

- Oscillator = 0 to 100 chart bellow the line chart. (Not an overlay chart.)

0-30: "Oversold" - Bullish
70-100: "Overbought" - Bearish
30-70: Nuetral

Owing vs Owning:

Long position = Buy and make
Short position
↓

Step 1: Borrow 100 shares IBM.
Step 2: Sell stock at current market price.
$50 × 100 = $5,000
2 months later
Step 3: Buy 100 shares @ $30
shares = $3,000.
Step 4: Pay back lender "in-kind"

Leverage - Using borrowed capitals to purchase an investment.

$100,000 All Cash	$20,000 Equity
$80,000 After 1yr	$80,000 Debt (5%)
$20,000 Gain	$100,000

$$ROR = \frac{\$120,000}{\$100,000} = 20\%$$

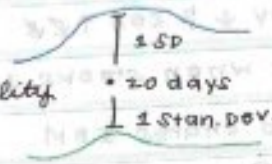
$80,000 After yr 1

$$\frac{\$16,000}{\$20,000} = 80\%$$

Sofia Villar
Nelson
B. Stats (4)

Bollinger Bands:

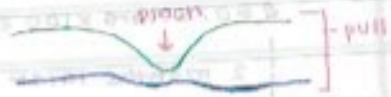
- measures of spread / volatility



→ predict future ↑/↓ in price volatility

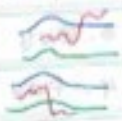
↳ PINCHED = future ↑ volatility

↳ PULLED APART = future ↓ volatility



→ stock price crosses over upper band = bearish

→ stock price crosses below lower band = bullish



RSI: Relative Strength Index

- Scale of 0-100

↳ under 30 (0-30) = oversold → BULLISH false buying

↳ over 70 (70-100) = overbought → BEARISH

30-70 = neutral

- overlay charts: "in kind" chart on top of main line
- oscillator: 0-100 chart below line chart
- indicators = predictors

- Leverage: using borrowed capital to purchase an investment

scenario 1	scenario 2
Ø leverage	w/ leverage
$100,000 all cash equity	$20,000 cash equity
$120,000 1yr. $80,000	$80,000 loan debt
− $20,000 gain loss	$100,000
ROR = $\frac{\$20,000}{\$100,000}$ = (−) 20%	$120,000 after 1yr. $80,000
*leveraging increases volatility ↑/↓	(−) $20,000 (gain) loss − $4,000 (interest)
	ROR = $\frac{\$16,000}{\$20,000}$ = 80% $\frac{-\$24,000}{\$20,000}$ =

■ = if you lost money

- long position: Buy ↓ & sell ↑$$
- short position: when stocks ↓

1. Borrow 100 shares IBM
2. Sell stock @ current market price immediately
   $60/share x100 shares = $5,000

   | 2 months later

3. Buy 100 shares @ $70/share ($7,000)
4. Pay back lender "in kind"

→ "in kind" i.e. you buy $5,000 of IBM for 100 stocks. Your lender wants 100 stocks back, not the $5,000.

Sofia Villar
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B.Stats (4)

Candlesticks (StockCharts.Com)

History

roots in Japanese rice markets

The Japanese began using technical analysis to trade rice in the 17th century. While this early version of technical analysis was different from the US version initiated by Charles Dow around 1900, many of the guiding principles were very similar:

guiding principles

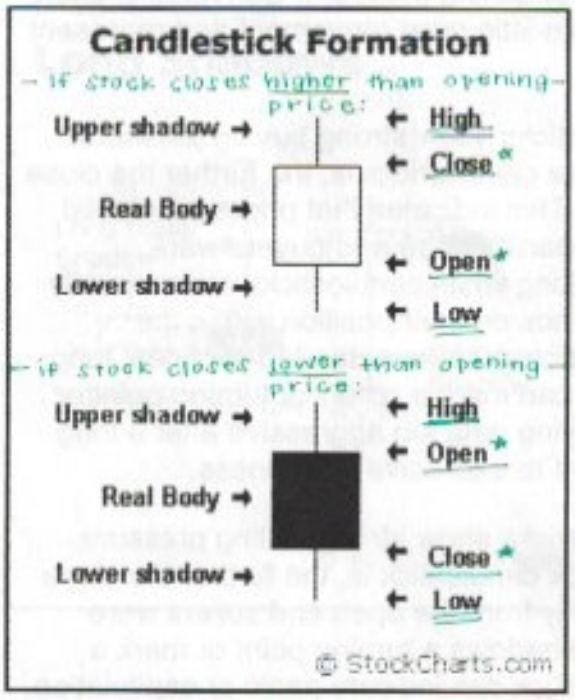
- The "what" (price action) is more important than the "why" (news, earnings, and so on).
- All known information is reflected in the price.
- Buyers and sellers move markets based on expectations and emotions (fear and greed).
- Markets fluctuate.
- The actual price may not reflect the underlying value.

According to Steve Nison, candlestick charting first appeared sometime after 1850. Much of the credit for candlestick development and charting goes to a legendary rice trader named Homma from the town of Sakata. It is likely that his original ideas were modified and refined over many years of trading eventually resulting in the system of candlestick charting that we use today.

Formation

resembled box plots

In order to create a candlestick chart, you must have a data set that contains open, high, low and close values for each time period you want to display. The hollow or filled portion of the candle is called "the body" (also referred to as "the real body"). The long thin lines above and below the body represent the high/low range and are called "shadows" (also referred to as "wicks" and "tails"). The high is marked by the top of the upper shadow and the low by the bottom of the lower shadow. If the stock closes higher than its opening price, a hollow candlestick is drawn with the bottom of the body representing the opening price and the top of the body representing the closing price. If the stock closes lower than its opening price, a filled candlestick is drawn with the top of the body representing the opening price and the bottom of the body representing the closing price.



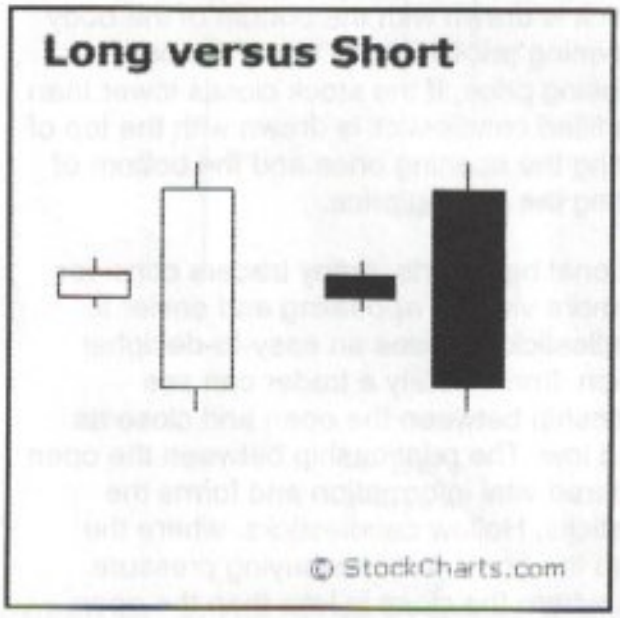
- the bigger the body, the ↑ the Volatility

Compared to traditional bar charts, many traders consider candlestick charts more visually appealing and easier to interpret. Each candlestick provides an easy-to-decipher picture of price action. Immediately a trader can see compare the relationship between the open and close as well as the high and low. The relationship between the open and close is considered vital information and forms the essence of candlesticks. Hollow candlesticks, where the close is greater than the open, indicate buying pressure. Filled candlesticks, where the close is less than the open, indicate selling pressure.

Hollow candlesticks: close > open = buying pressure

Filled candlesticks: close < open = selling pressure

Long Versus Short Bodies

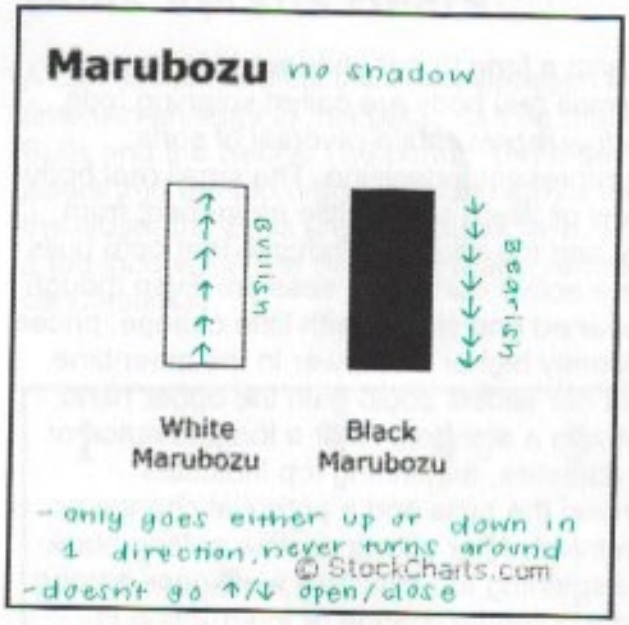


Generally speaking, the longer the body is, the more intense the buying or selling pressure. Conversely, short candlesticks indicate little price movement and represent consolidation.

Long white canclesticks show strong buying pressure. The longer the white candlesticks is, the further the close is above the open. This indicates that prices advanced significantly from open to close and buyers were aggressive. While long white candlesticks are generally bullish, much depends on their position within the broader technical picture. After extended declines, long white candlesticks can mark a potential turning point or support level. If buying gets too aggressive after a long advance, it can lead to excessive bullishness.

Long black candlesticks show strong selling pressure. The longer the black candlestick is, the further the close is below the open. This indicates that prices declined significantly from the open and sellers were aggressive. After a long advance, a long black candlestick foreshadows a turning point or mark a future resistance level. After a long decline a long black candlestick can indicate panic or capitulation.

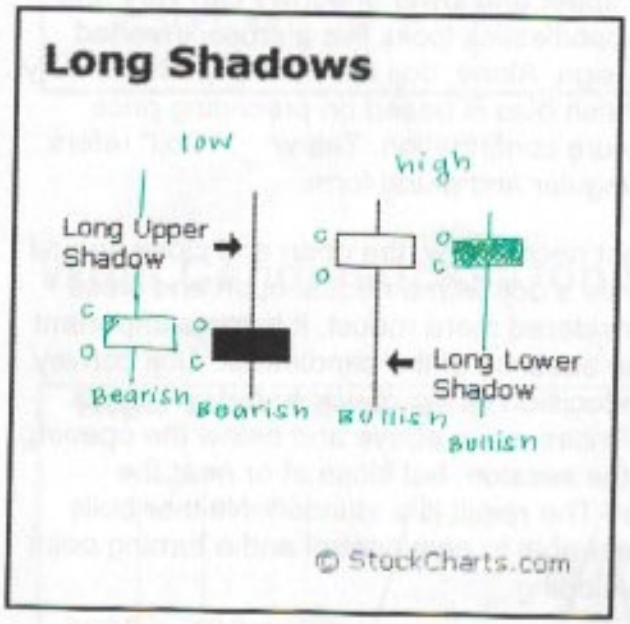
> Be able to identify all!



Even more potent long candlesticks are the Marubozu brothers, Black and White. Marubozu do not have upper or lower shadows and the high and low are represented by the open or close. A White Marubozu forms when the open equals the low and the close equals the high. This indicates that buyers controlled the price action from the first trade to the last trade. Black Marubozu form when the open equals the high and the close equals the low. This indicates that sellers controlled the price action from the first trade to the last trade.

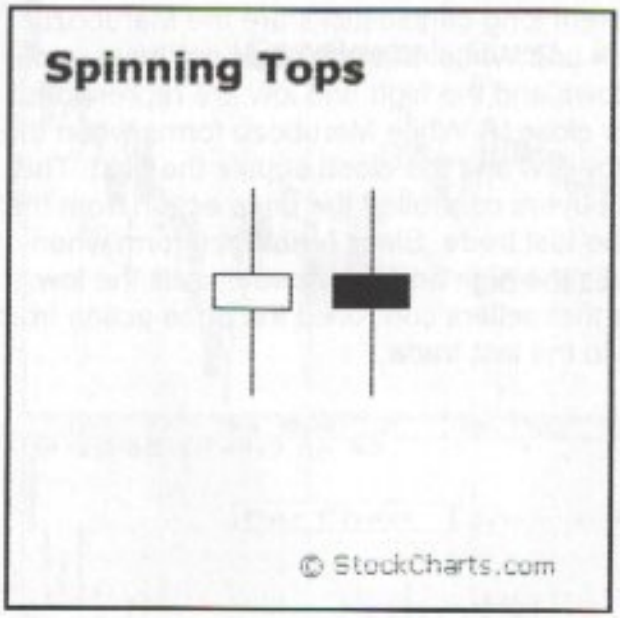
Long Versus Short Shadows

The upper and lower shadows on candlesticks can provide valuable information about the trading session. Upper shadows represent the session high and lower shadows the session low. Candlesticks with short shadows indicate that most of the trading action was confined near the open and close. Candlesticks with long shadows show that prices extended well past the open and close.



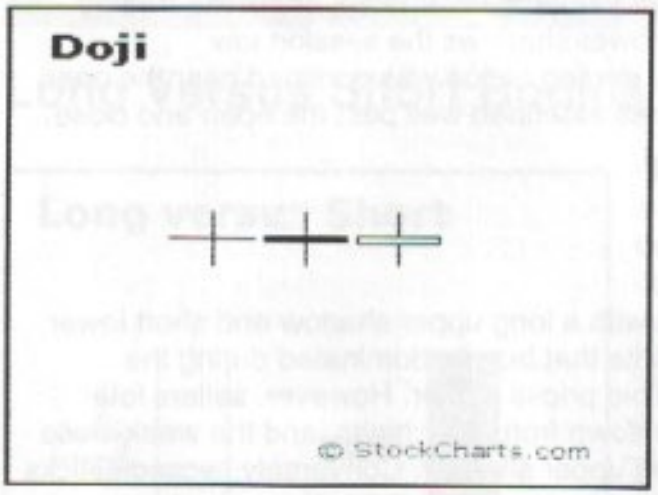
Candlesticks with a long upper shadow and short lower shadow indicate that buyers dominated during the session, and bid prices higher. However, sellers later forced prices down from their highs, and the weak close created a long upper shadow. Conversely, wcandlesticks with long lower shadows and short upper shadows indicate that sellers dominated during the session and drove prices lower. However, buyers later resurfaced to bid prices higher by the end of the session and the strong close created a long lower shadow.

long shadow ↑ body = Bearish
long shadow ↓ body = Bullish
* disregard shading
Bearish = close near low
Bullish = close near ~~low~~ high

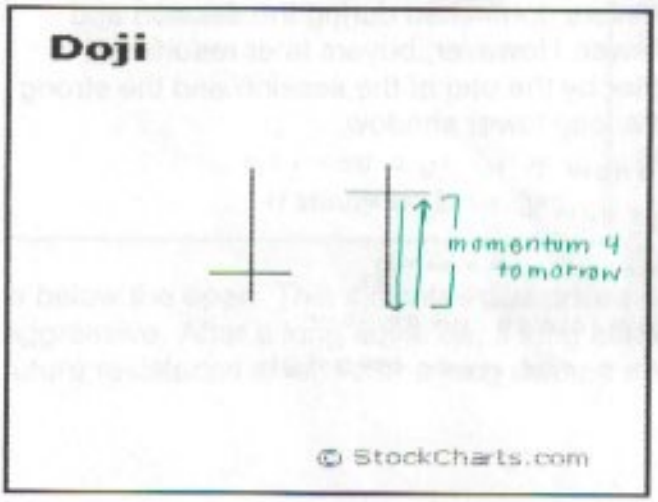


Candlesticks with a long upper shadow, long lower shadow and small real body are called spinning tops. One long shadow represents a reversal of sorts; spinning tops represent indecision. The small real body (whether hollow or filled) shows little movement from open to close, and the shadows indicate that both bulls and bears were active during the session. Even though the session opened and closed with little change, prices moved significantly higher and lower in the meantime. Neither buyers nor sellers could gain the upper hand and the result was a standoff. After a long advance or long white candlestick, a spinning top indicates weakness among the bulls and a potential change or interruption in trend. After a long decline or long black candlestick, a spinning top indicates weakness among the bears and a potential change or interruption in trend.

Doji



Doji are important candlesticks that provide information on their own and as components of in a number of important patterns. Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation. The word "Doji" refers to both the singular and plural form.

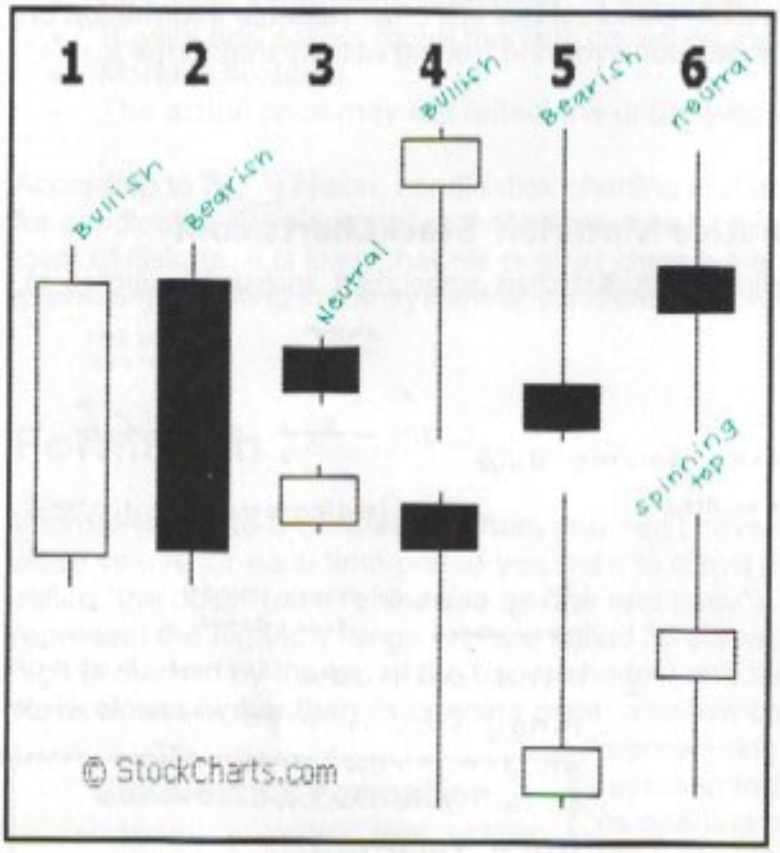


Ideally, but not necessarily, the open and close should be equal. While a doji with an equal open and close would be considered more robust, it is more important to capture the essence of the candlestick. Doji convey a sense of indecision or tug-of-war between buyers and sellers. Prices move above and below the opening level during the session, but close at or near the opening level. The result is a standoff. Neither bulls nor bears were able to gain control and a turning point could be developing.

no bodies, open and close near same price
- neutral, not interesting

Bulls Versus Bears

A candlestick depicts the battle between Bulls (buyers) and Bears (sellers) over a given period of time. An analogy to this battle can be made between two football teams, which we can also call the Bulls and the Bears. The bottom (intra-session low) of the candlestick represents a touchdown for the Bears and the top (intra-session high) a touchdown for the Bulls. The closer the close is to the high, the closer the Bulls are to a touchdown. The closer the close is to the low, the closer the Bears are to a touchdown. While there are many variations, I have narrowed the field to 6 types of games (or candlesticks):

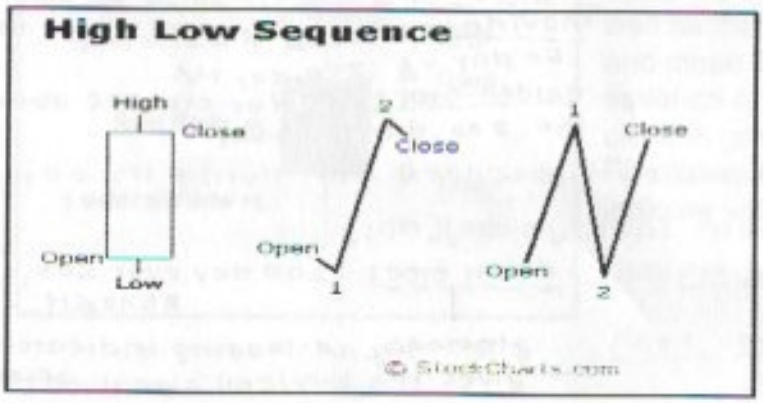


1. Long white candlesticks indicate that the Bulls controlled the ball (trading) for most of the game.
2. Long black candlesticks indicate that the Bears controlled the ball (trading) for most of the game.
3. Small candlesticks indicate that neither team could move the ball and prices finished about where they started.
4. A long lower shadow indicates that the Bears controlled the ball for part of the game, but lost control by the end and the Bulls made an impressive comeback.
5. A long upper shadow indicates that the Bulls controlled the ball for part of the game, but lost control by the end and the Bears made an impressive comeback.
6. A long upper and lower shadow indicates that the both the Bears and the Bulls had their moments during the game, but neither could put the other away, resulting in a standoff.

only applies to previous trend/ influence

spinning top, usually neutral, may now be bullish bc hit bottom of ↓ trend, and expected to go up (vice versa)

What Candlesticks Don't Tell You



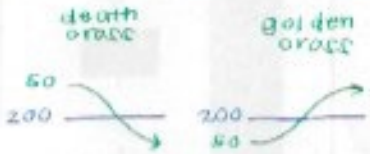
Candlesticks do not reflect the sequence of events between the open and close, only the relationship between the open and the close. The high and the low are obvious and indisputable, but candlesticks (and bar charts) cannot tell us which came first.

With a long white candlestick, the assumption is that prices advanced most of the session. However, based on the high/low sequence, the session could have been more volatile. The example above depicts two possible high/low sequences that would form the same candlestick. The first sequence shows two small moves and one large move: a small decline off the open to form the low, a sharp advance to form the high, and a small decline to form the close. The second sequence shows three rather sharp moves: a sharp advance off the open to form the high, a sharp decline to form the low, and a sharp advance to form the close. The first sequence portrays strong, sustained buying pressure, and would be considered more bullish. The second sequence reflects more volatility and some selling pressure. These are just two examples, and there are hundreds of potential combinations that could result in the same candlestick. Candlesticks still offer valuable information on the relative positions of the open, high, low and close. However, the trading activity that forms a particular candlestick can vary.

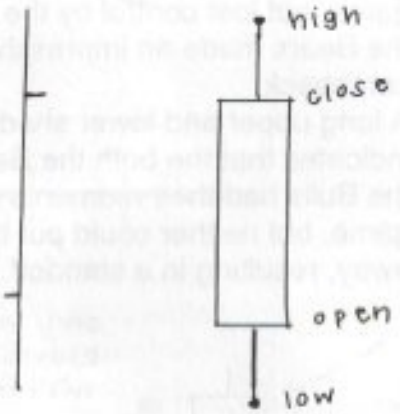
Thank You to The Source Of This Informative Material: StockCharts.com

http://stockcharts.com/school/doku.php?st=Candlestick+closing+price&id=chart_school:chart_analysis:introduction_to_cand

1. current trends will continue
2. high volume days more significant than low volume days.
3. long bodies more significant than short bodies
4.



indicators = predictors



→ close
← open

1. long body > short body
   more force — less force
2. trend continues (what happens today has a predictive value on tomorrow) assumption makes it a predictive value
3. high volume > low volume
   more force — less force
4. close near high = bullish signal
   close near low = bearish signal

Time series: chart where time is measured on one of the axes (usually the H-axis)

moving average (measure of center)
50 day vs. 200 day MA
golden cross - 50 day crosses above the 200 day = BULLISH

· consumer price index: measures changes in the costs for living in consumer products from last year (CPI)

death cross: 200 day over 50 = BEARISH
↓
generally, a lagging indicator gives the buy/sell signal after the stock price starts to move

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P. 3

- Indicator = Predictor
- Moving Avgs - Measure of Central Tendency
  50 day vs. 200 day
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- Bollinger Bands - low / tight volatility ⇒ then must soon be high volatility
  - Measures of Spread / volatility
  - → Predict future increases/decreases
  - Price Volatility:
    - Pinched together = future high volatility
    - Pulled apart = future low
  - → If stock price crosses above upper band = Bearish
  - → If stock price crosses below lower band = Bullish

Oscilator: Relative Strength Index - Measure strength / weakness of stock to see if overbought / oversold
0-100
- 0-30 (oversold) - Bullish, 70-100 (overbought) - Bearish, 30-70: Neutral
- Overlay Charts: Bollinger Bands, moving avg (?)

- Leverage - Using borrowed capital to purchase an investment

Scenario 1	2	
$100,000 all cash	$20,000 cash	
$120,000 after 1 yr	$80,000 (loan 5%) / 100,000	
$20,000 gain		$\frac{20,000 - 4,000}{20,000} = 80\%$ (gain, borrowed loan)
RoR = $\frac{20,000}{100,000} = 20\%$	$120,000 after 1 yr	

- Long position - Buy stock & hold on to it
- Short position - Ex. borrow 100 shares (of $GM), $50 / share = $5,000
  later - stock goes down: 100 shares, $30 / share = $3,000
  "In kind" debt - Pay back 100 (Ex. $3,000) what you borrow
- Bars = Volume

Peter Messina

P.3

Candlesticks (StockCharts.Com)

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History

Grain market

The Japanese began using technical analysis to trade rice in the 17th century. While this early version of technical analysis was different from the US version initiated by Charles Dow around 1900, many of the guiding principles were very similar:

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AEL BA

MTOR

REM

Formation

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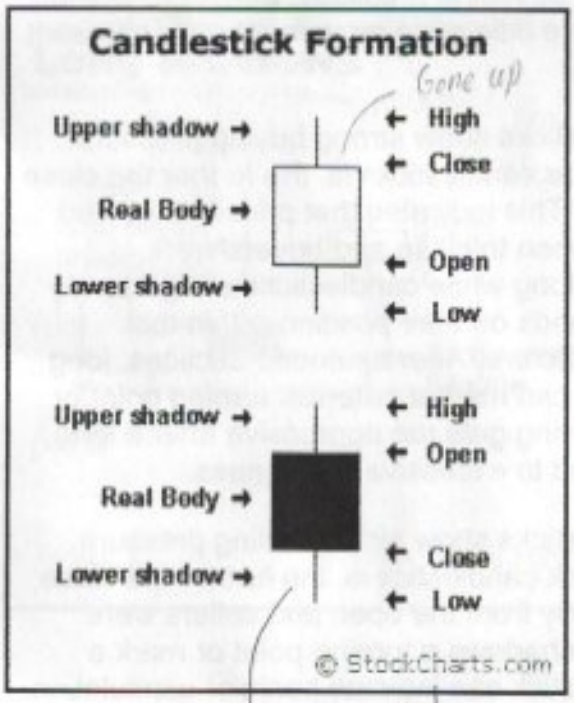

Had gone down that day

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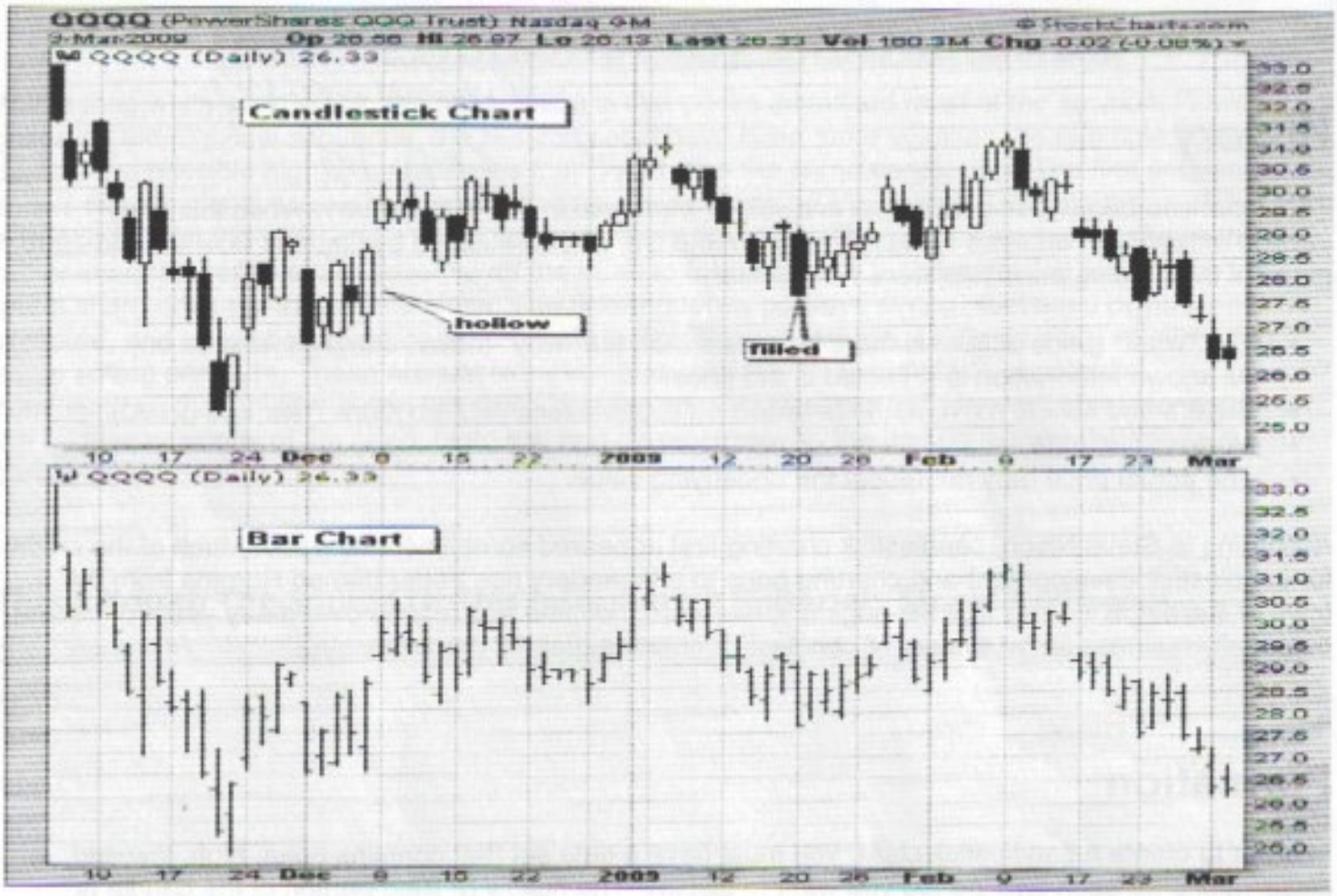
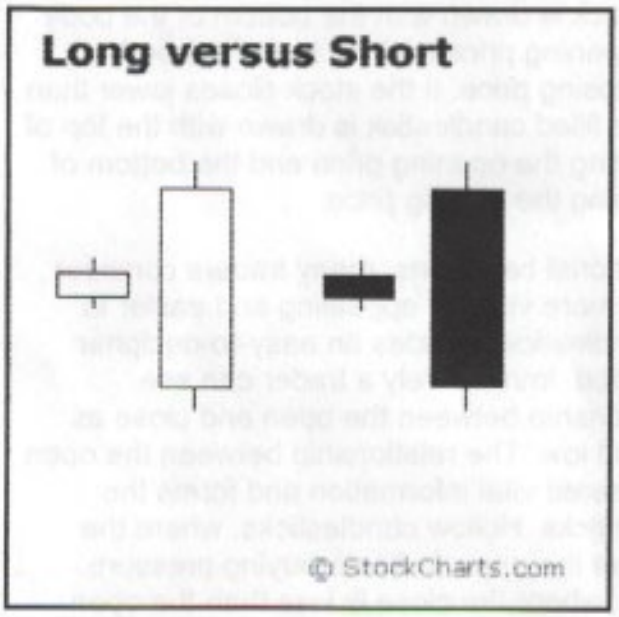
1. Long body > Short body — dist. (more push)
2. Trend continues
3. High volume > Low volume — lots participating
4. Close near high ↑ = Bullish — prices going up
Close near low ↓ = Bearish — going down



Long Versus Short Bodies



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Long white canclesticks show strong buying pressure. The longer the white candlesticks is, the further the close is above the open. This indicates that prices advanced significantly from open to close and buyers were aggressive. While long white candlesticks are generally bullish, much depends on their position within the broader technical picture. After extended declines, long white candlesticks can mark a potential turning point or support level. If buying gets too aggressive after a long advance, it can lead to excessive bullishness.

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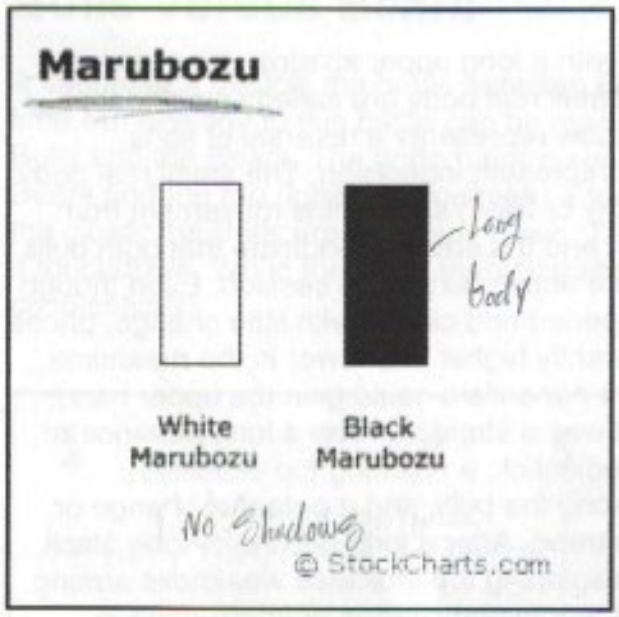

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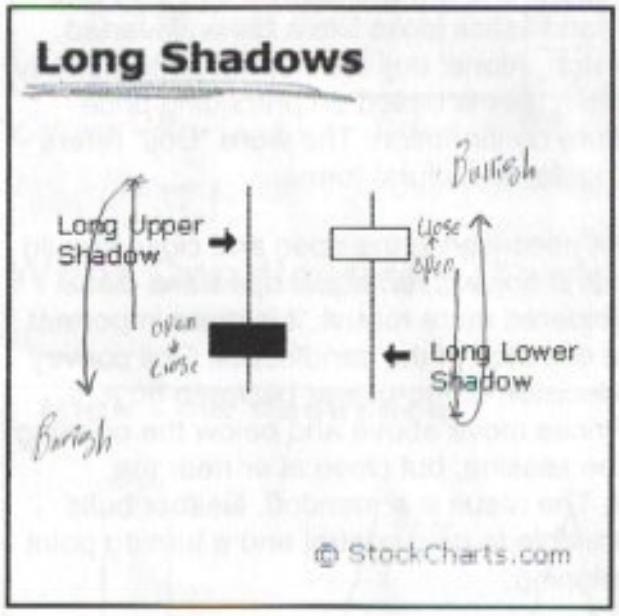

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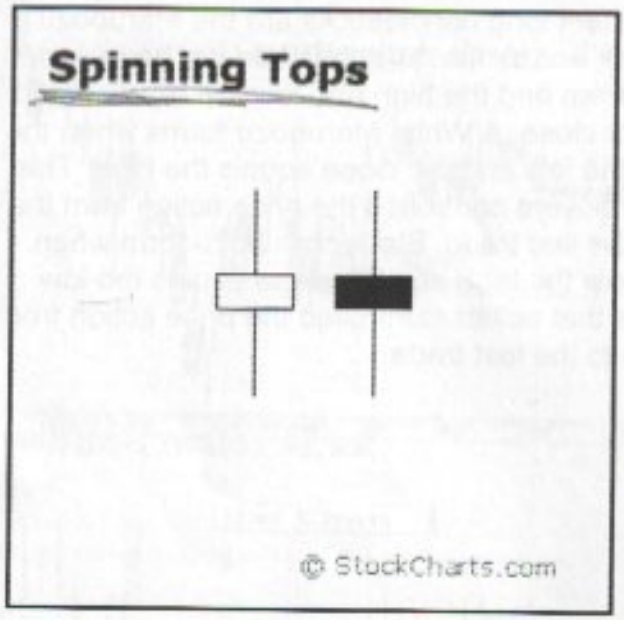
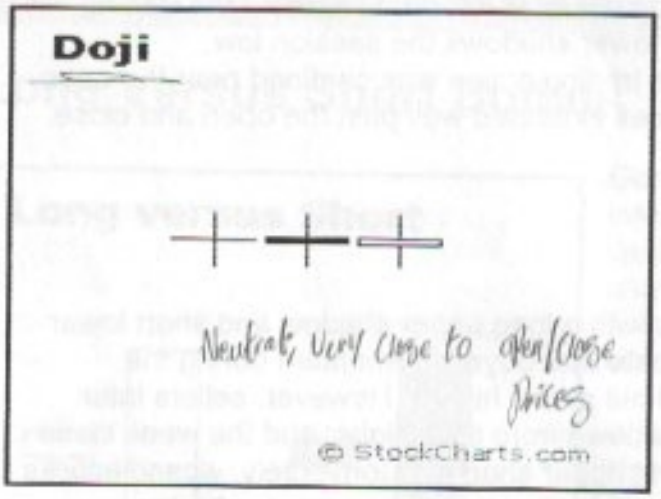
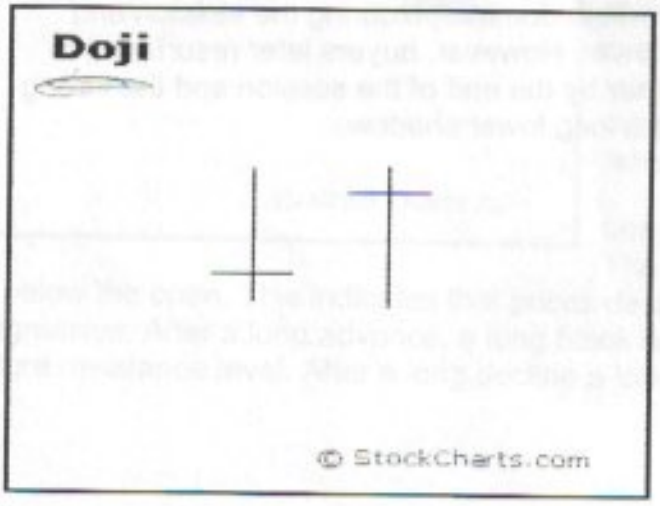


Candlesticks with a long upper shadow, long lower shadow and small real body are called spinning tops. One long shadow represents a reversal of sorts; spinning tops represent indecision. The small real body (whether hollow or filled) shows little movement from open to close, and the shadows indicate that both bulls and bears were active during the session. Even though the session opened and closed with little change, prices moved significantly higher and lower in the meantime. Neither buyers nor sellers could gain the upper hand and the result was a standoff. After a long advance or long white candlestick, a spinning top indicates weakness among the bulls and a potential change or interruption in trend. After a long decline or long black candlestick, a spinning top indicates weakness among the bears and a potential change or interruption in trend.

Doji



Doji are important candlesticks that provide information on their own and as components of in a number of important patterns. Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign. Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation. The word "Doji" refers to both the singular and plural form.



Ideally, but not necessarily, the open and close should be equal. While a doji with an equal open and close would be considered more robust, it is more important to capture the essence of the candlestick. Doji convey a sense of indecision or tug-of-war between buyers and sellers. Prices move above and below the opening level during the session, but close at or near the opening level. The result is a standoff. Neither bulls nor bears were able to gain control and a turning point could be developing.

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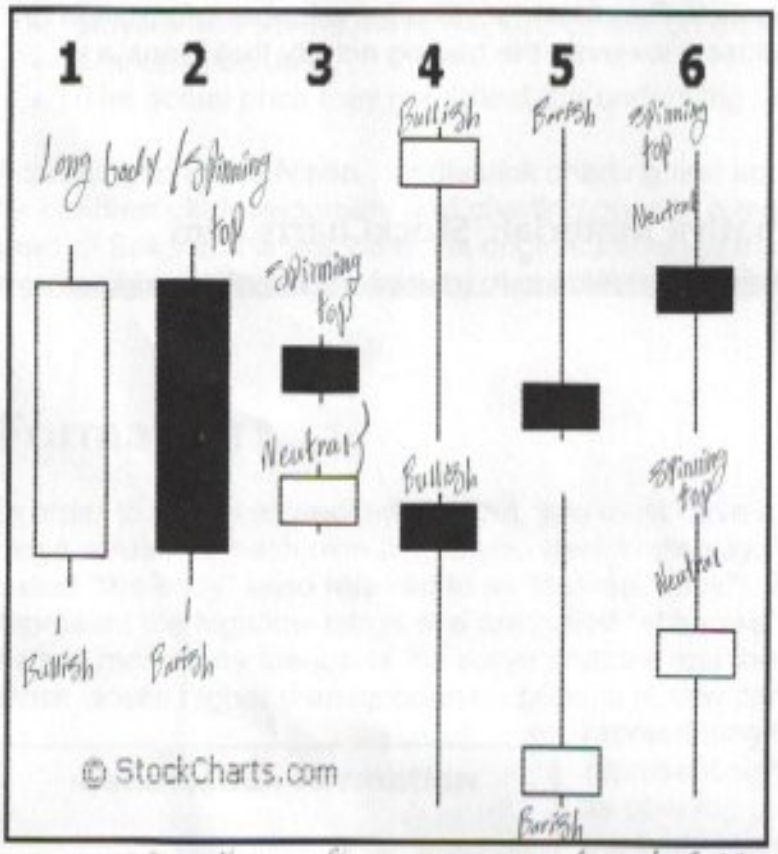
A candlestick depicts the battle between Bulls (buyers) and Bears (sellers) over a given period of time. An analogy to this battle can be made between two football teams, which we can also call the Bulls and the Bears. The bottom (intra-session low) of the candlestick represents a touchdown for the Bears and the top (intra-session high) a touchdown for the Bulls. The closer the close is to the high, the closer the Bulls are to a touchdown. The closer the close is to the low, the closer the Bears are to a touchdown. While there are many variations, I have narrowed the field to 6 types of games (or candlesticks):



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• Consumer Price Index - to measure changes in cost of living

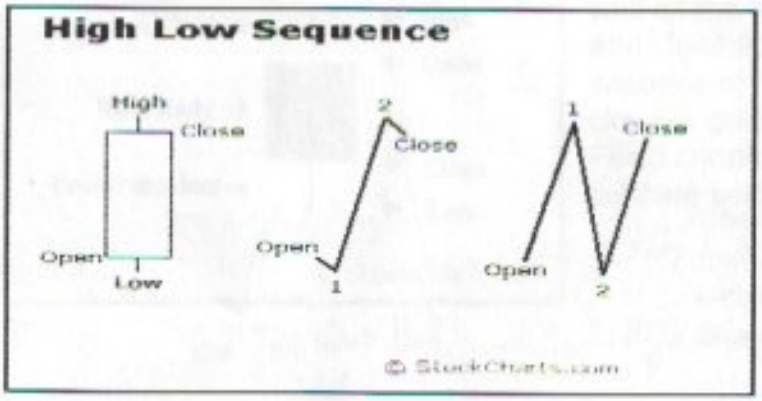
• Rate of Return - Earnings on asset generated in consideration of initial value

• Net present value - Value of a spec. future value
- Determines whether a project is worth doing

• Moving avg - Tracking & identifies patterns

• Lagging indicator

What Candlesticks Don't Tell You



Candlesticks do not reflect the sequence of events between the open and close, only the relationship between the open and the close. The high and the low are obvious and indisputable, but candlesticks (and bar charts) cannot tell us which came first.

Israel Sigue
p.

Candlesticks (StockCharts.Com)

new info

examples

History

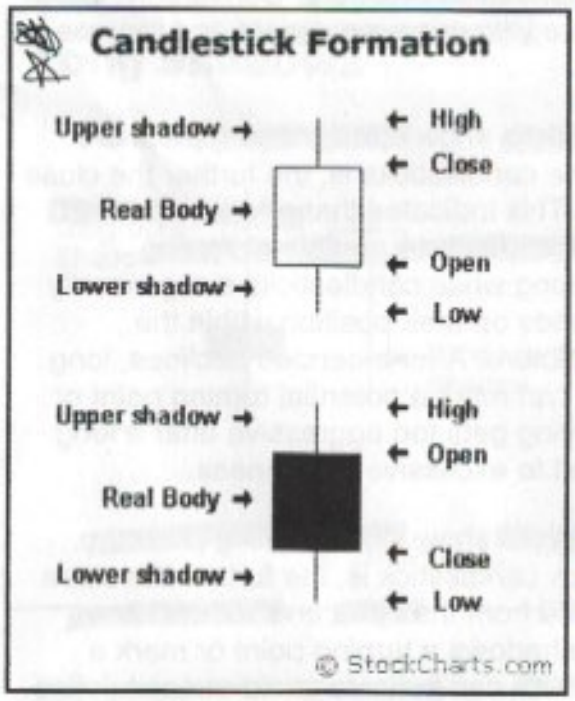
The Japanese began using technical analysis to trade rice in the 17th century. While this early version of technical analysis was different from the US version initiated by Charles Dow around 1900, many of the guiding principles were very similar:

- The "what" (price action) is more important than the "why" (news, earnings, and so on).
- All known information is reflected in the price.
- Buyers and sellers move markets based on expectations and emotions (fear and greed).
- Markets fluctuate.
- The actual price may not reflect the underlying value.

According to Steve Nison, candlestick charting first appeared sometime after 1850. Much of the credit for candlestick development and charting goes to a legendary rice trader named Homma from the town of Sakata. It is likely that his original ideas were modified and refined over many years of trading eventually resulting in the system of candlestick charting that we use today.

Formation

In order to create a candlestick chart, you must have a data set that contains open, high, low and close values for each time period you want to display. The hollow or filled portion of the candle is called "the body" (also referred to as "the real body"). The long thin lines above and below the body represent the high/low range and are called "shadows" (also referred to as "wicks" and "tails"). The high is marked by the top of the upper shadow and the low by the bottom of the lower shadow. If the stock closes higher than its opening price, a hollow candlestick is drawn with the bottom of the body representing the opening price and the top of the body representing the closing price. If the stock closes lower than its opening price, a filled candlestick is drawn with the top of the body representing the opening price and the bottom of the body representing the closing price.



Compared to traditional bar charts, many traders consider candlestick charts more visually appealing and easier to interpret. Each candlestick provides an easy-to-decipher picture of price action. Immediately a trader can see compare the relationship between the open and close as well as the high and low. The relationship between the open and close is considered vital information and forms the essence of candlesticks. Hollow candlesticks, where the close is greater than the open, indicate buying pressure. Filled candlesticks, where the close is less than the open, indicate selling pressure.

yahoo Finance:
hollow/white candle stick: green
filled in: red

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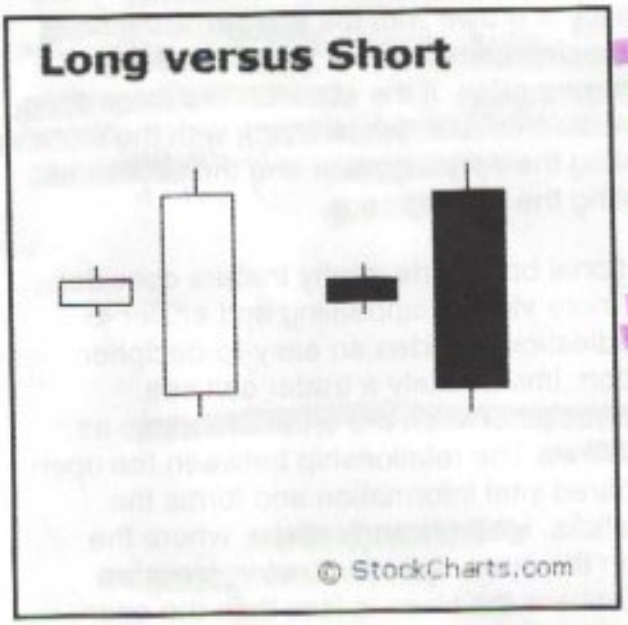

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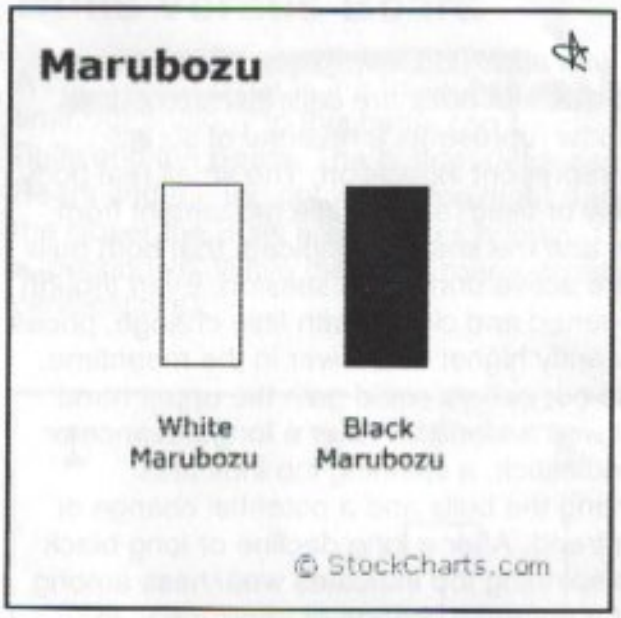

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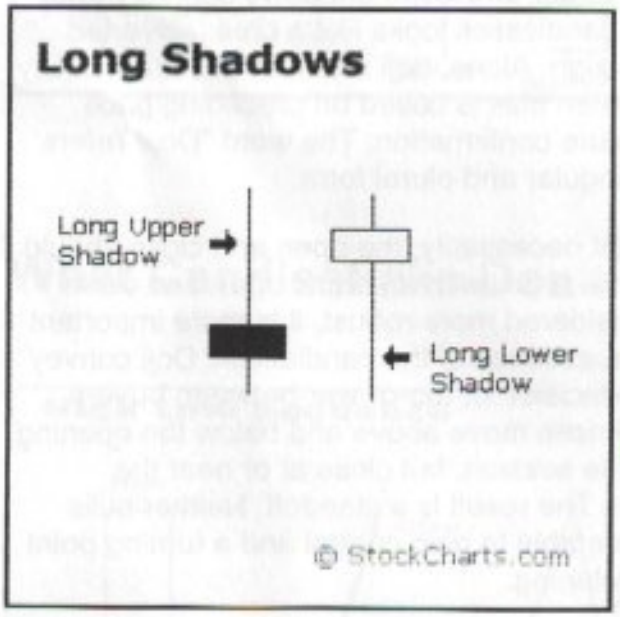

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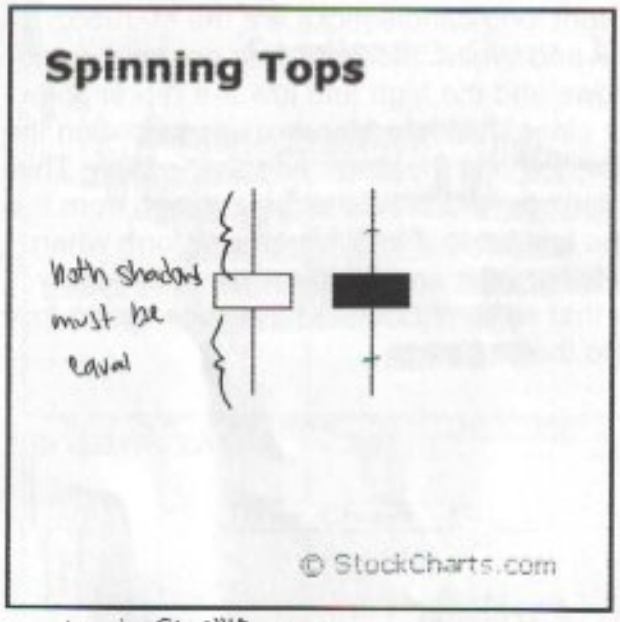

↳ basically neutral indicators

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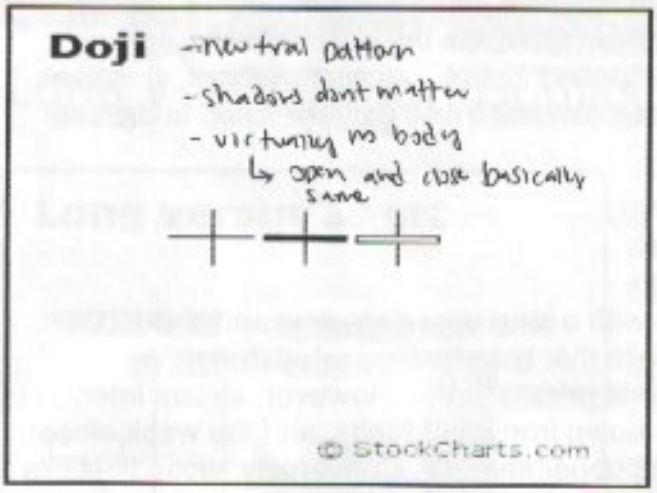

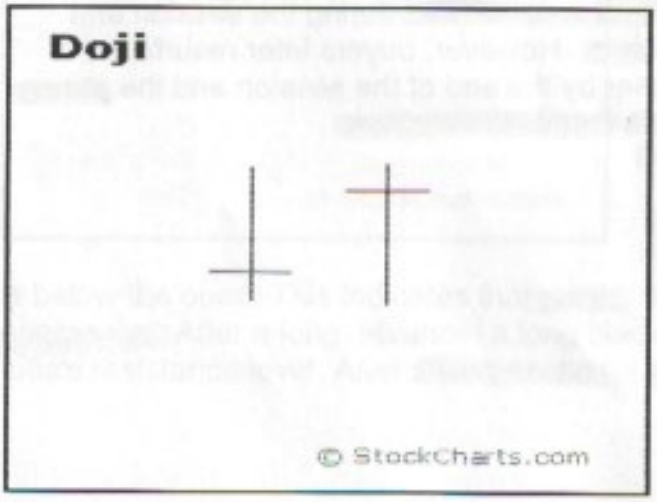

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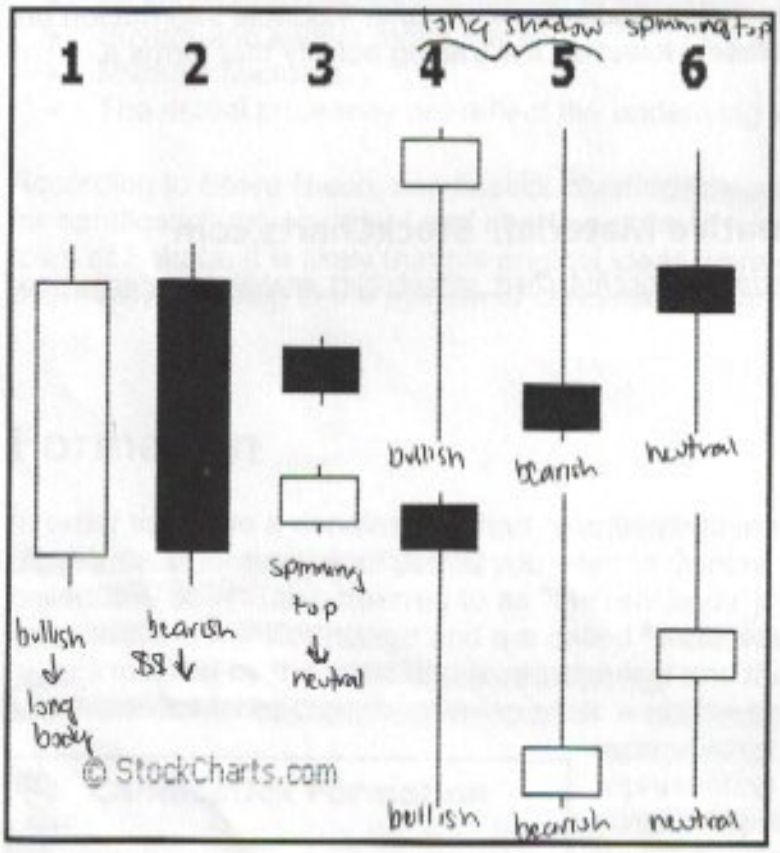

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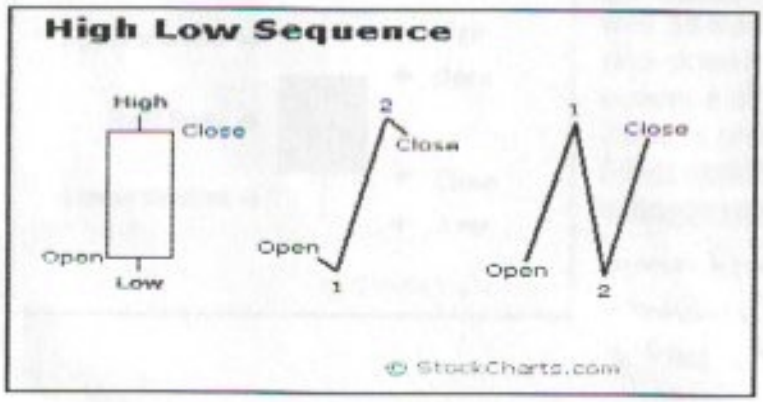

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With a long white candlestick, the assumption is that prices advanced most of the session. However, based on the high/low sequence, the session could have been more volatile. The example above depicts two possible high/low sequences that would form the same candlestick. The first sequence shows two small moves and one large move: a small decline off the open to form the low, a sharp advance to form the high, and a small decline to form the close. The second sequence shows three rather sharp moves: a sharp advance off the open to form the high, a sharp decline to form the low, and a sharp advance to form the close. The first sequence portrays strong, sustained buying pressure, and would be considered more bullish. The second sequence reflects more volatility and some selling pressure. These are just two examples, and there are hundreds of potential combinations that could result in the same candlestick. Candlesticks still offer valuable information on the relative positions of the open, high, low and close. However, the trading activity that forms a particular candlestick can vary.

Thank You to The Source Of This Informative Material: StockCharts.com

http://stockcharts.com/school/doku.php?st=Candlestick+closing+price&id=chart_school:chart_analysis:introduction_to_cand

*

#1 - current trends will continue

#2 - high volume days more significant than low value days

#3 - long bodies are more significant than short bodies

#4 - closes the day near its high
✓ bullish
bearish closes the day near its low