

How to read a stock chart

UD Osher – OLLI

Fall 2026

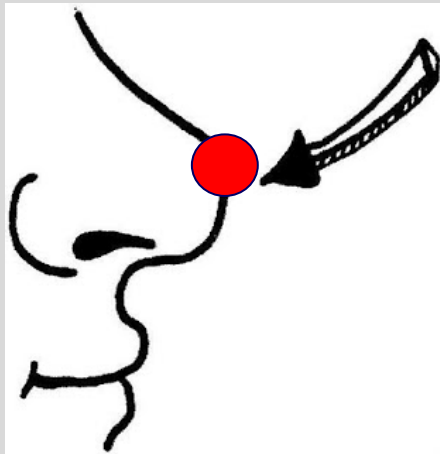
Class 4

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Disclaimer in plain language

Disclaimer – in plain language:



Opinions are like noses, everyone has one !

You are going to see Guy's and mine in this course !!

We are simply sharing our perspective.

This is not investment advice or recommendation.

Rachel and I are not a financial advisors.

This course is for educational purposes only.

Form your own opinion, make your own investment decisions.

Summary of what you saw

Moving averages smooth out price action

Moving averages always lag price action

- Longer the moving average, more the lag
- Exponential moving averages move faster than Simple Moving Averages

Moving averages are trend indicators

- Direction of mid and longer moving averages can indicate established trend
- In an established trend
 - Price > short term MA > mid term MA > long term MA - in an uptrend
 - Price < short term MA < mid term MA < long term MA – in a downtrend

On a trend change

- Price moves first
- Moving averages follow in order of length.

Summary of what you saw

Crossovers can be useful signals

Price crossover

- Price crosses over a MA that is relevant support or resistance

Moving averages crossover

- Bullish – shorter term MA crosses over longer term MA
- Bearish – shorter term MA crosses below longer term MA
- Moving average crossovers are lagging (late) signals
- Crossovers in the direction of an even longer term average are more reliable

This week's Class

Indicators

- Moving Average Convergence Divergence
- Relative Strength Index

I am in Wilmington (Arsht Hall – Room 213)

- If you are on-line, we are in a hybrid format
 - I will repeat questions or comments asked in class for those on-line to hear.

Analysis with 2 moving averages

- Fast EMA (shorter time) and Slow EMA (longer time)
- In an uptrend
 - Price moves first.
 - Fast moving average will crossover long moving average.
 - Moving average cross-over always lags price move.
- Exponential moving averages move faster than simple ones.
- The two moving averages
 - Come closer – converge – trend is decelerating
 - Go apart - diverge – trend is accelerating

What is **MACD**

- **M**oving **A**verage **C**onvergence and **D**ivergence
 - Primarily a measure of price MOMENTUM
- Gerald Appel
- Uses EMA(12) as the fast EMA and EMA(26) as the slow one.

$MACD = EMA(12) - EMA(26)$.. The difference between the two

MACD Line = EMA(9) of the MACD

- Bullish crossover of the MACD over the MACD line suggests an uptrend start.
- Bearish crossover suggests a downtrend start.

MACD Histogram

- MACD Histogram is the difference between the MACD and the MACD Line

MACD Histogram = MACD – MACD Line

- Plotted as an histogram
- MACD is zero when the MACD crosses over the MACD Line
- In a bullish crossover the histogram is going from negative numbers through zero to a positive number
- In a bearish crossover the histogram is going from a positive number through zero to a negative number
- A flat top or bottom in the histogram is an early signal

MACD Signals - Divergences

- Divergences A MACD divergence can occur when
 - Bearish - subsequent price peaks are higher (2nd higher than 1st) and corresponding MACD peaks are lower (2nd lower than 1st)
 - Bullish – subsequent price troughs are lower (2nd lower than 1st) and corresponding MACD peaks are higher (2nd higher than 1st)
- A divergence accompanied by MACD histogram crossing zero in the direction of the suggested trend reversal is a stronger signal.

Relative Strength Index

- A momentum oscillator that measures the speed and change of price movements relative to its history.
 - J. Welles Wilder Jr. in 1978 – *"New Concepts in Technical trading systems"*
 - *Often confused – Relative does not mean relative to something else.*
- Oscillates between 0 and 100
 - Above 70 – overbought
 - Below 30 – oversold
- Signals
 - Crossing the 50 (centerline)
 - Failure swings
 - Divergences

RSI - Details

- ❑ Calculated for a specific period of time. Default is 14 periods.
- ❑ Two components
 - ❑ At the start
 - ❑ Average gain = (Sum of gains in 14 periods) /14
 - ❑ Average loss = (sum of losses in 14 periods)/14
 - ❑ Subsequently for the 15th data point onwards
 - ❑ Average gain = [(Previous average gain)*13 + current average gain]/14
 - ❑ Average loss = [(Previous average loss)*13 + current average loss]/14
- ❑ Two are combined
 - ❑ Relative strength (RS) = Average gain ÷ Average Loss ... unbound indicator
 - ❑ $RSI = 100 - 100 \div (1 + RS)$... normalizes RS to oscillate between 0 and 100
- ❑ Like Exponential Moving averages, RSI becomes more accurate when calculated over long periods of time prior to the current period.
 - ❑ Stockcharts default is 250 prior periods to the start date of any chart.

RSI Values

- RSI is a normalized oscillator moving between 0 and 100.
- Extremes
 - RSI is zero when there are 14 periods of loss and no gains to report ... (average gain = 0)
 - RSI under 30 ... oversold .. Can be adjusted to fit a particular security or market condition
 - RSI over 70 ... overbought .. Can be adjusted to fit a particular security or market condition
 - RSI is 100 when there are 14 periods of gain and no losses to report ... (average loss = 0)
- Calculation periods
 - 14 is default
 - Shorter periods .. Higher sensitivity – earlier signals & more noise
 - Longer periods .. Lower sensitivity – delayed signals & less noise
 - Can be adjusted to fit the typical volatility in a stock.

RSI Signals – Overbought and oversold

- A security in a sideways pattern (stock is in a range and trendless),
 - will reach the overbought range at price tops
 - will reach the oversold range at price bottoms
- In strong up or down trend,
 - the oscillator can become overbought or oversold and remain so for some time
 - the price top or bottom may be established after several overbought or oversold readings
- Use the indicator in the context of the prevailing trend.
 - The trend is your friend. (Bullish signal readings in a bullish trend)
- Other technicians have later observed that RSI does not really oscillate between 0 and 100 (Constance Brown)
 - Bull market – between 40 and 90 ... 40-50 zone is support
 - Bear market – between 10 and 60 ... 50-60 zone is resistance

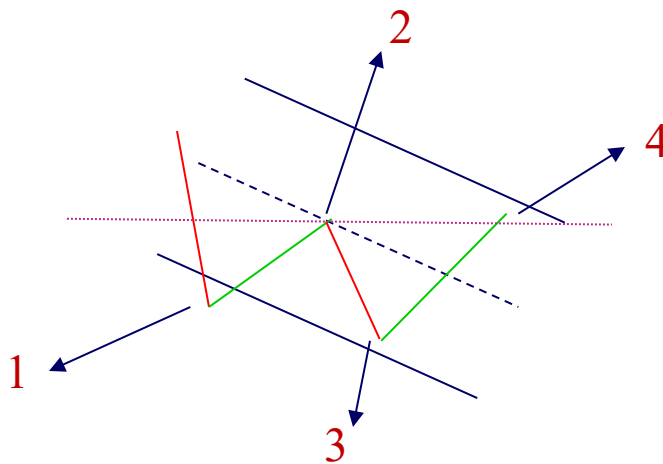
RSI in an analysis

- RSI is used in conjunction with other indicators
 - MACD
 - Moving averages and envelopes (Bollinger Bands)
- Both RSI and MACD measure momentum
 - RSI measures it based on price movement relative to history
 - MACD based on movement of moving averages

Bollinger Band trading signals

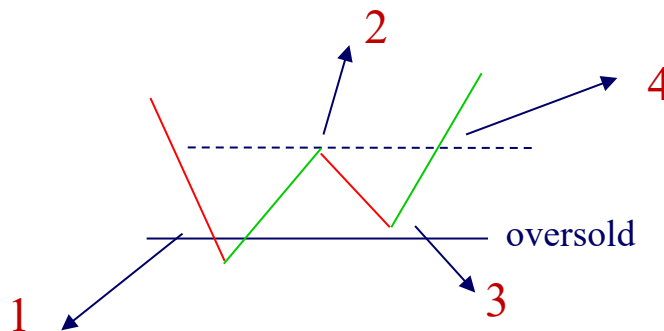
□ W bottoms – potential start of a new uptrend

1. Price falls below the lower band.
2. Then recovers to the middle average
3. Then falls back down to a lower low that **does not** touch the lower band
4. Then rises and breaks out of the resistance of the middle bands and prior peaks in the down trend.



RSI Signals – Momentum exhaustion

- Failure swings (reversals) in a downtrend
 - Bullish - Similar to a W bottom on a Bollinger band.
 - The oversold line is the boundary

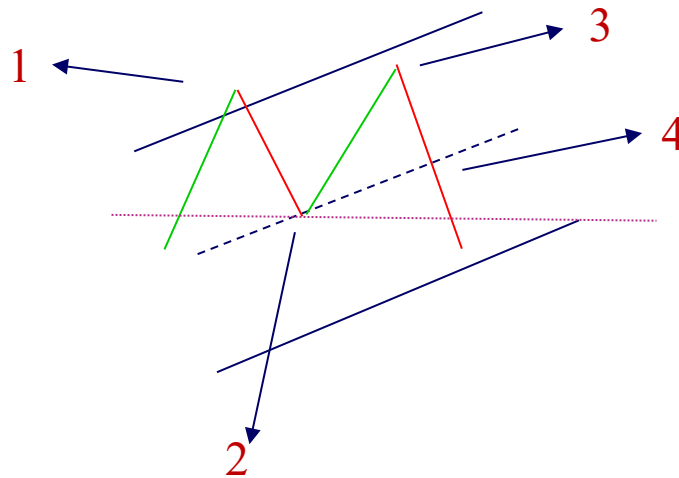


- Upward skewed W bottoms – on RSI independent of price.
 1. RSI falls below 30
 2. Then recovers above 30
 3. Then falls back down but **does not** fall below 30 (this is a less important condition)
 4. Then rises and breaks out of the resistance of the prior peak.

Bollinger Band trading signals

□ M tops – potential start of a new downtrend

1. Price rises above the upper band.
2. Then drops to the middle average
3. Then rises up again towards the upper band but **does not** touch the upper band
4. Then falls and breaks out of the support of the middle band and prior low in the uptrend.

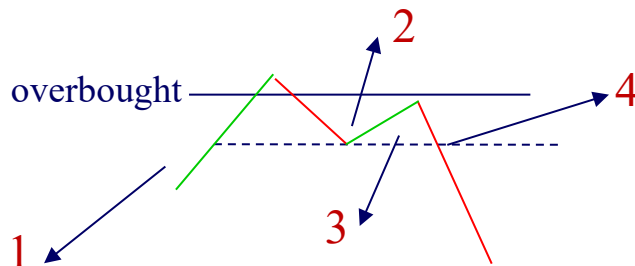


RSI Signals – Momentum Exhaustion

□ Failure swings in an uptrend

□ Bearish - Similar to a M top on a Bollinger band.

□ The overbought line is the boundary



□ Downward skewed M tops – on RSI independent of price.

1. RSI rises above 70
2. Then falls below 70
3. Then rises again but **does not** rise above 70 (less important condition)
4. Then falls and breaks below the support of the prior low.

RSI Signals – Andrew Cardwell

- Andrew Cardwell – radically different interpretation
 - RSI interpretation depends on the underlying trend
 - Underlying trend is indicated by RSI value ranges
 - Bullish RSI Range – RSI oscillates between 40 and 80
 - Super Bullish Range – RSI oscillates between 60 and 80
 - Bearish Range – RSI oscillates between 20 & 65
 - Positive reversal (Bullish) ... while stock is in a trend regime
 - Price forms a lower low than the previous one.
 - RSI forms a higher low than the previous one.
 - Negative reversal (Bearish) ... while stock is in a trend regime
 - Price forms a higher high than the previous one
 - RSI forms a lower high than the previous one. The higher high in the 50 to 70 range.
 - A shift in RSI from one trend regime to another is relevant
 - RSI breaks above 65 .. Trend reversal UP
 - RSI breaks below 40 ... trend reversal DOWN
 - In a shift regime a divergence signal is a trend reversal signal.

Signal versus noise

- By now we have covered several signal ideas
 - Moving average crossovers
 - M tops and W bottoms on Bollinger bands
 - RSI signals
 - MACD signals
- The signal is likely to be more real if:
 - Several of these happen in a short time period (less than a week)
 - Volume is confirming the signals

Let's ride the bicycle

Useful references:

- Stockcharts – Chartschool
https://school.stockcharts.com/doku.php?id=technical_indicators:moving_averages
- Investopedia
<https://www.investopedia.com/terms/m/movingaverage.asp>

Links to more details topics are in the segment the above link points to

Go live in Stockcharts.com and explore

1. Basics of Stockcharts setup
2. what we just learned

Next week's Class

Last class for this course

□ Typical Chart Patterns

- Continuation
- Reversal

Thanks !!

- Happy Investing !!

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