
Technical Indicators

Technical Indicator's

Technical indicators are heuristic or pattern-based signals produced by the price, volume, and/or open interest of a security or contract used by traders who follow technical analysis.

The result is plotted in chart in order to understand the present situation & predict Future Trend.

By analyzing historical data, technical analysts use indicators to predict future price movements.

https://www.investopedia.com/terms/i/indicator.asp

Technical Indicators do not analyze any part of the Fundamental Business, like Earnings, Revenue & Profit Margins.

Technical analysts or chartists look for technical indicators in historical asset price data in order to judge entry and exit points for trades.

There are several technical indicators than fall broadly into two main categories: overlays and oscillators.

Leading indicators attempt to predict where the price is headed.

Lagging indicators offer a historical report of background conditions that resulted in the current price being where it is.

Popular technical indicators include SMAs, EMAs, bollinger bands, stochastics, MACD, and on-balance volume.

Technical indicators, by and large, fit into five categories - trend, mean reversion, relative strength, volume, and momentum.

Trend indicators (lagging) analyze whether a market is moving up, down, or sideways over time.

Mean reversion indicators (lagging) measure how far a price swing will stretch before a counter impulse triggers a retracement.

Relative strength indicators (leading) measure oscillations in buying and selling pressure.

Momentum indicators (leading) evaluate the speed of price change over time.

Volume indicators (leading or lagging) tally up trades and quantify whether bulls or bear are in control.

TI’s are most extensively used by active traders in the market, as they are primarily designed for analyzing short term price movements.

To a long term investor, most technical indicators are of little value.

The Result Value of Technical Indicator

1.Alert the trader about trend.

2.Predict the direction of future prices.

3.Confirm Ta suggested by other indicators.

Uses of Technical Indicators

To alert: Technical Indicators gives alerts or sometimes gives signals on the break out of support. Positive divergence act as an alert for the break out of resistance level.

To confirm: Indicators can be used to confirm other technical tools such as candlesticks patterns on charts.

To predict: Technical Indicators can be used to predict future movements of the prices.

https://www.investopedia.com/articles/trading/12/using-trading-indicators-effectively.asp

Tips for Using Indicators

1. One Should Not Solely Rely On Indicators.
2. Technical Indicators Should be read with other technical tools.
3. One should not use more than five indicators.

Challenge offered by Indicators

1. Open to Interpretation.
2. Always another level.
3. Not all Signals Work.
4. Sometimes the indicators give late signals.

Source :https://www.elearnmarkets.com/blog/comprehensive-guide-technical-indicators/

Technical Indicators Perspective

Mathematical Formula.

Applied on Price , Volume & Open interest.

Price data includes any combination of the Open, High, Low or Close over a period of time.

Some indicator may use only Closing Price while other uses volume & so on.

Technical Analyst use indicators to look into a different perspective from which stock prices can be analysed.

Indicator acts as an alert to study price action.

Sometime it also gives a signals.

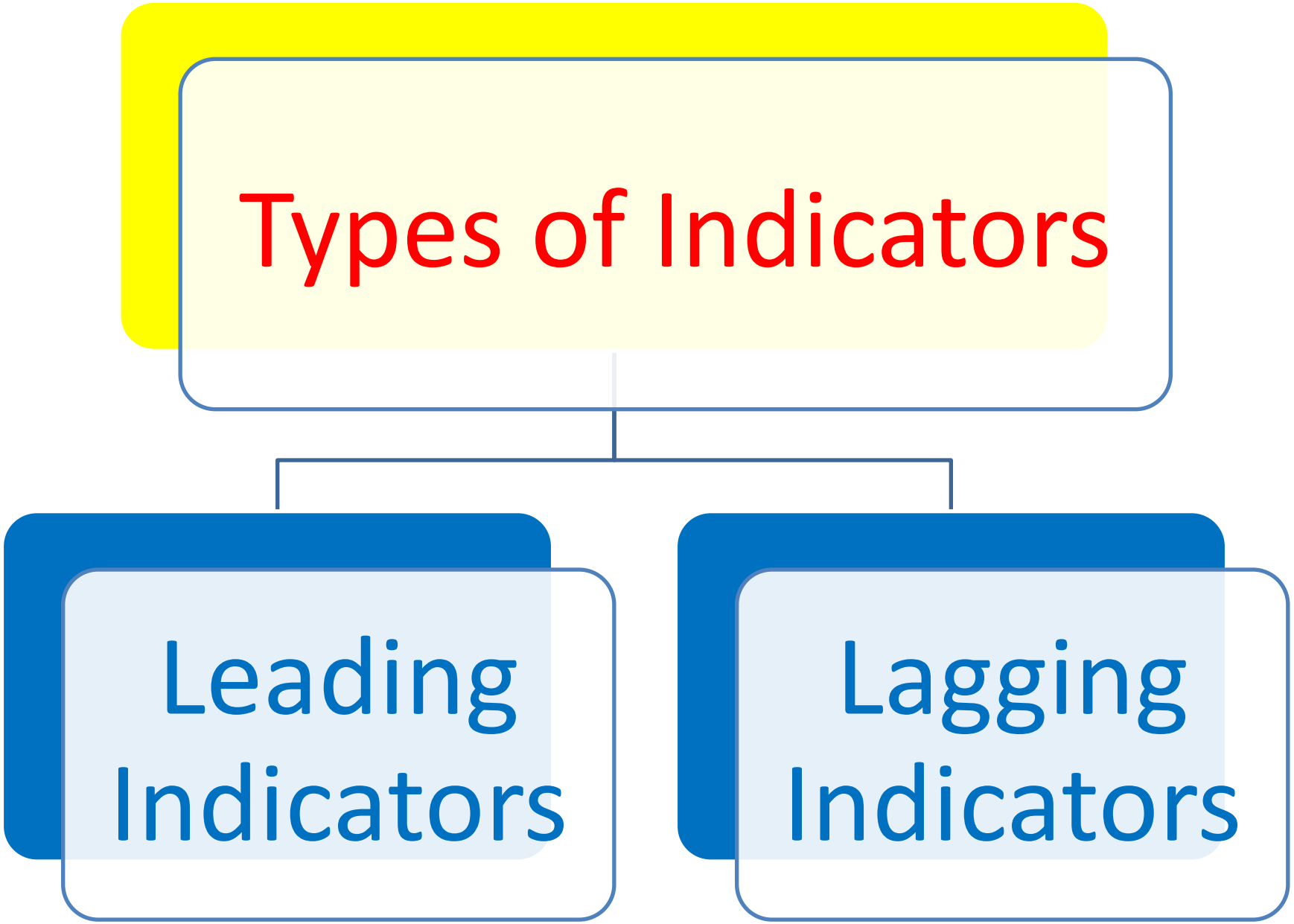
Sometime it provides an early indication of pattern breakout.

Positive Divergence act as an alert for Resistance Breakout.

Negative Divergence act as an alert for Support Breakout.

Indicator also sometime predict the direction of future prices.

Patterns study only Price Behaviour whereas indicators study price as well as volume, open interest , derivatives of prices in order to make them more reliable.


Types of Indicators
Leading Indicators
Lagging Indicators


Influence FUTURE
Performance
LEADING
LAGGING
Analyze PAST
Performance

CATEGORIES OF INDICATORS

A

LEADING

Give trade signals when the trend is about to start.

They try to predict price, by using a shorter period in their calculation, thereby leading the price movement.

B

LAGGING

Are those that follow the price action.

They give a signal after the trend or reversal has started. Use them to determine a trend.

Leading Indicator

- Lead the price action before it happens.
- Early signalling for entry & exit, generating more signals & allow more opportunity to trade.
- Indicator consider the number of days for which data will be taken to create indicator.
- Represents a form of price momentum over a fixed look back periods, which is the number of periods used to calculate the indicator.
- Eg. CCI, Momentum, RSI, Stochastic Oscillators, Williams R%.

Advantages

- Provide favourable entry points for a possible move.
- Leading indicators assist traders in their pursuit of entering higher probability trades because they identify key levels

Disadvantages

- Forecasted price action is not guaranteed.
- Traders need to apply their own knowledge of these indicators in each situation
- Leading indicators are often more insightful in advanced technical analysis techniques, such as Elliott Wave Theory, which may be daunting for new traders

Lagging Indicators

- The indicators that would follow a trend rather than predicting a reversal.
- Performance is best when there persists a fair long trend.
- They don't warn you of upcoming changes in price.
- They simply tell you what prices are doing.
- Rule : “Trend is your Friend.”
- Makes you buy or sell late & miss out on the early opportunities.
- Eg. Moving Averages, MACD – Convergence & Divergence.

Advantages	• Provides greater conviction to enter trades confirms recent price action. • Reduces the risk of failed moves or false breakouts.
Disadvantages	• Traders sacrifice potential pips while waiting for confirmation from the lagging indicator. • Lagging indicators have no concept of key levels therefore, traders need to be aware of this.

Evaluation of Technical Indicators

Technical indicators are used to see past trends and anticipate future moves.

Trading strategies, including entry, exit, and trade management rules, often use one or more indicators to guide day-to-day decisions.

There is no evidence to suggest that one indicator is foolproof or a holy grail for traders.

Strategies (and indicators used within those strategies) will vary depending on the investor's risk tolerance, experience, and objectives.

Technical analysis indicator provides a viewpoint on the strength and direction of the price action of the stock.

Technical analysis indicator determines the support and resistance levels. This indicates whether the price has dropped lower (support) or has climbed higher (resistance).

Technical indicators help in establishing upward and downward trends. This is critical for both traders and investors.

Technical analysis indicator can act as an alarm, alerting a technical analyst of any major price action or volatility.

Make a note that the best Technical analysis indicator are those that have been tried and tested in the past and have proven to be successful.

Do not become the “Jack of all Trades and Master of None!” Nothing will come your way if you attempt to master all Technical analysis indicator and oscillators.

Use the indicators which best complements your trading style.

Use two or three indicators, as using just one may give you a false signal.

Remember that each technical indicator provides unique information. Identify it and grab the opportunity.

Be aware of the weakness associated with most Technical analysis indicator.

Using Trading Indicators Effectively

Using Multiple Indicators

- *Types of Indicators*
- *Avoiding Redundancy*
- *Using Complementary Indicators*

Keep Trading Charts Clean

- *Keeping Charts Clean*
- *Information Overload*
- *Tips for Organizing*

Chart created with TradeStation

- *Colours*
- *Layout*
- *Sizing and Fonts*

Optimizing Indicators

- *User-Defined Input Variables*
- *Optimization*
- *Overoptimization*

Moving Average

Moving Averages

One of the most common & familiar trend following indicators.

They smooth a data series, reduce chaos & make it easier to spot trend.

Helpful in Volatile Markets.

Types : 1. Simple Moving Average (SMA)
2. Exponential Moving Average (EMA)

Use of Moving Average

A moving average (MA) is a widely used technical indicator that smooths out price trends by filtering out the “noise” from random short-term price fluctuations.

Moving averages can be constructed in several different ways, and employ different numbers of days for the averaging interval.

The most common applications of moving averages are to identify trend direction and to determine support and resistance levels.

When asset prices cross over their moving averages, it may generate a trading signal for technical traders.

While moving averages are useful enough on their own, they also form the basis for other technical indicators such as the moving average convergence divergence (MACD).

A moving average (MA) is a stock indicator that is commonly used in technical analysis.

The reason for calculating the moving average of a stock is to help smooth out the price data over a specified period of time by creating a constantly updated average price.

A simple moving average (SMA) is a calculation that takes the arithmetic mean of a given set of prices over the specific number of days in the past; for example, over the previous 15, 30, 100, or 200 days.

Exponential moving averages (EMA) is a weighted average that gives greater importance to the price of a stock on more recent days, making it an indicator that is more responsive to new information.

SMA

A simple moving average (SMA) calculates the average of a selected range of prices, usually closing prices, by the number of periods in that range.

The SMA is a technical indicator that can aid in determining if an asset price will continue or reverse a bull or bear trend.

The SMA can be enhanced as an exponential moving average (EMA) that more heavily weights recent price action.

$$SMA = A1+A2+\ldots+An \,/\, n$$

where: A=the price of an asset at period n n=number of time periods

EMA

Exponential moving averages are designed to see price trends over specific time frames like 50 or 200 days.

Compared to simple moving averages, EMAs give greater weight to recent (more relevant) data.

Computing the exponential moving average involves applying a multiplier to the SMA.

Moving average ribbons allow traders to see multiple EMAs at the same time.

https://www.investopedia.com/articles/active-trading/052014/how-use-moving-average-buy-stocks.asp#:~:text=The%20moving%20average%20(MA)%20is,time%20period%20the%20trader%20chooses.

https://www.investopedia.com/terms/s/sma.asp#:~:text=Key%20Takeaways-,A%20simple%20moving%20average%20(SMA)%20calculates%20the%20average%20of%20a,a%20bull%20or%20bear%20trend.

EMA gives more importance to present data to older data.

Weakness : SMA is little slow to react to recent price change.

EMA is preferred as it reduces effect of lag.

Calculating EMA is harder then SMA.

Method : As a Percent based & As a Period based

EMA (Current) = (((Price (Current) – EMA (Previous)) X (Multiplier)) + EMA(Previous)

Using Moving Averages

Moving Averages keep a trader in line with the Present Trend.

It helps to Buy & Sell Stock in direction of present trend.

It may be late & not exactly at top or bottom.

Ways to identify moving averages: Direction, Location & Crossovers.

Direction

- First Identification Technique
- UP : Rising
- Down : Declining

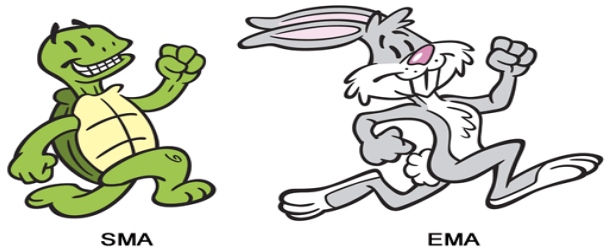
Location

- Second Identification Technique
- Located Below Moving Avg. : Down Trend
- Located Above Moving Avg. : Up Trend

Crossovers

- Third Identification Technique
- Up : Shorter Moving Avg is crossing above Longer Moving Avg.
- Down : Shorter Moving Avg. Is crossing below Longer Moving Avg.

	SMA	EMA
PROS	Displays a smooth chart which eliminates most fakeouts.	Quick Moving and is good at showing recent price swings.
CONS	Slow-moving, which may cause a lag in buying and selling signals	More prone to cause fakeouts and give errant signals.



	Summary	When to use	What to bear in mind
SMA	The slower-moving average, usually used to confirm a trend rather than predict it.	Good for longer-term trades. Can also be used to calculate EMA – though charts can do this for you.	The slow pace could mean missing a good trade entry point if you rely on SMA alone.
EMA	A faster-moving average that places more emphasis on recent price data.	Good for short-term trades where the most current price data is the most relevant.	The average is very reactive to new prices, so you could read too much into price spikes – they might not be part of a trend.


RSI

Relative Strength Index (RSI)

The relative strength index (RSI) is a popular momentum oscillator developed in 1978.

RSI is a Momentum Indicator.

Momentum: The rate of change / Speed / Slope at which security moves. (+ /-)

RSI is also an Oscillator.

Oscillator is an indicator that moves back & forth across a reference line or between prescribed upper & lower limits.

Oscillator: Reaches New High, it shows Uptrend & when it traces a lower peak, signals reversal.

Momentum change can provide a glimpse of what may happen in the future.

RSI Oscillates between 0% to 100%.

Reference Lines : Horizontal Lines.

Reference lines: At 30% & 70%.


RSI
70
50
30
OLYMP TRADE
WIKI

Overbought Zone : 70% to 100%.

Overbought Zone: Case where buying pressure relative to the recent past & is often an indication that upward trend is about to end.

Oversold Zone : 0% to 30%.

Oversold Zone : The lower part of momentum oscillator where there is a significant amount of selling pressure relative to the recent past & is indicative of an end to a down swing.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Instrument search
212@jonesdc.com
PRACTICE
GBP/USD Zero Spr...
1.34326
1.34326
RSI ACTION
SELL
BUY
Relative Strength Index (10, 70, 30, close) 48.31, 70, 30
13 Dec 2017
14 Dec
13:18:34 (GMT +0)
ACCOUNT VALUE £9 835.04
LIVE RESULT -£4.43
MARGIN 99%

Calculation

- $RSI = 100 - \frac{100}{(1 + RS)}$
- RS = Average Gain / Average Loss
- Average Gain:

  $= \frac{(\text{Previous Average Gain X 13 + Current Gain})}{14}$
- Average Loss:

  $= \frac{(\text{Previous Average Loss X 13 + Current Loss})}{14}$

Signals

The RSI is a price following indicator that ranges between 0 & 100.

Technical Analysts use 30% Oversold & 70% Overbought lines to generate Buy & Sell Signals.

Long : When the indicator moves into oversold zone & then crosses reference line from below.

Short : When the indicator moves into Overbought zone & then crosses reference line from above.

Divergence Signals

Indicator is finding divergence in price peaks / troughs & indicator peak / troughs.

If the price makes a new higher peak but the indicator fails to make a corresponding higher peak, this indicates there is less power driving the new price high which reveals down reversal could be expected.

If the price makes a new lower trough but the momentum indicator does not make a corresponding lower trough , then it be interpreted as the downtrend movement is running out of strength & a reversal upward could be soon be expected.

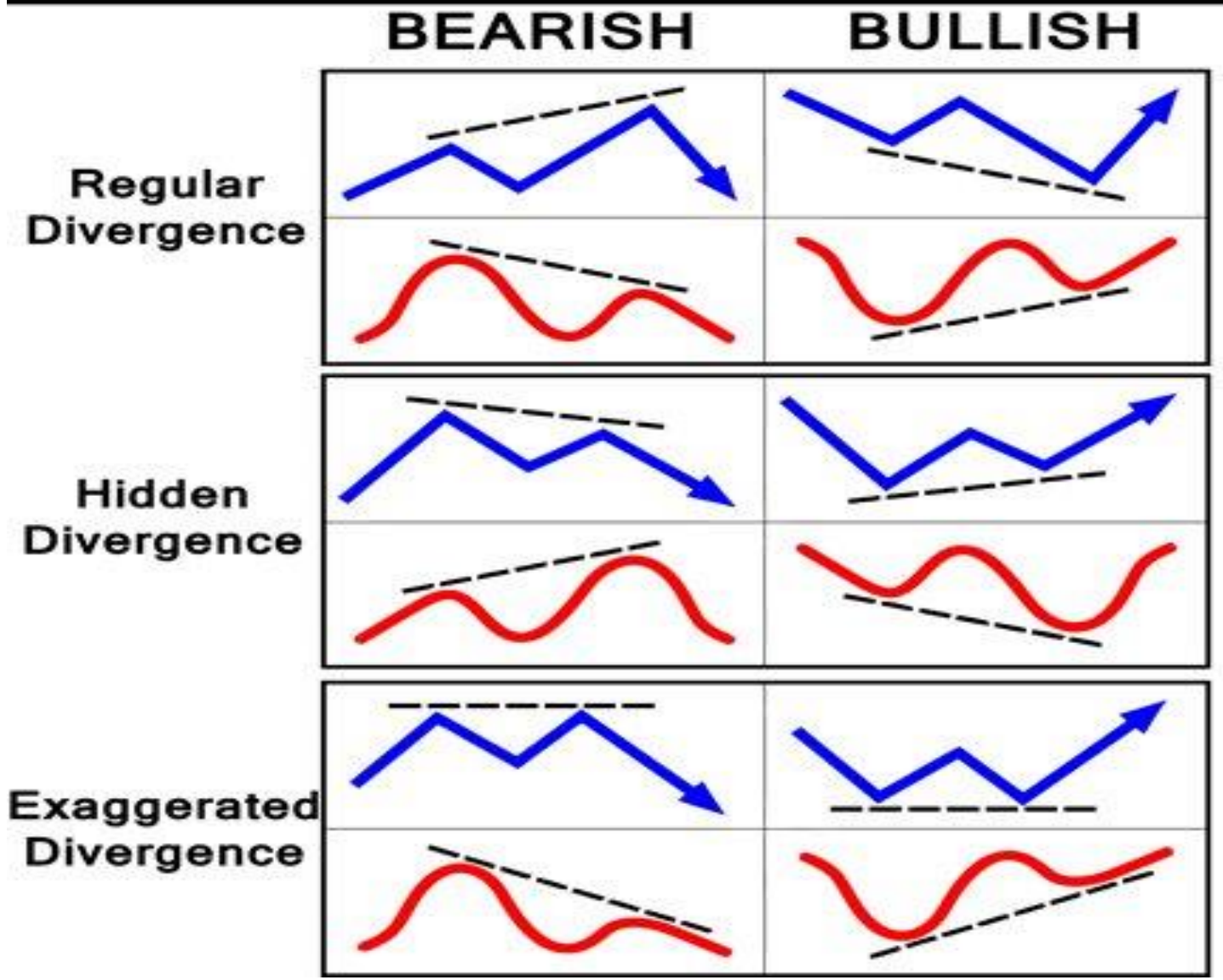
A bullish divergence represents upward price pressure & a bearish divergence represents downward price pressure

In Bullish Divergence , price made lower bottom but RSI made higher bottom compared to immediate previous bottom, suggesting Bullishness.

In Bearish Divergence , price made lower top but RSI made higher top compared to immediate previous top, suggesting Bearishness.

Price rally on the chart, post divergence , is eminent.

Divergence Cheat Sheet



Real Life Problem in use of RSI

RSI in overbought levels does not always signify an overbought market.

RSI in oversold levels does not always signify an oversold market.

RSI can remain in overbought/ oversold zone for long period of time.

A Bullish divergence may not always lead to a rally.

A Bearish divergence may not always lead to a decline.

Stochastic

Developed by George Lane.

It compares where a security's price closes over a selected number of period.

Commonly 14 periods Stochastic is used for analysis.

Designated by "%K", a mathematical ratio.

%K = (Today's Close – Low over a selected period)
(Highest over a selected period – Lowest Low over a selected period)

Values are converted into Percentage for scaling.

A moving average of %K is then calculated, which is designated by %D.

The most commonly 3 period's %D is used.

Moves between 0 & 100.

Also known as Stochastic Oscillator.

Oscillator near 0 signifies the today's close is near to lowest price security traded.

Oscillator near 100 signifies the today's close is near to highest price security traded.

Interpretation

Stochastic indicator reading above 80 is considered Overbought & below 20 is considered Oversold.

One should book profit in buy side position & should avoid new buy side positions in an overbought zone.

One should book profit in sell side position & should avoid sell side positions in oversold zone.

Buy when %K line crosses %D line to the upside in oversold zone & sell when %K line crosses %D line to the downside in overbought zone.

Positive divergence are formed when price makes new low , but stochastic oscillator fails to make new low.

Negative divergence are formed when price makes new high, but stochastic oscillator fails to make new high.

Divergence suggests a reversal of trend from up to down.

William’s R%

- Developed by Larry Williams.
- Indicator moves between 0 & Minus 100.
- Similar to Stochastic Oscillator.
- Overbought Zone : 0 & Minus 20
- Oversold Zone : Minus 80 to Minus 100

Interpretation

One should book profit in buy side positions & should avoid new buy side positions in an overbought zone.

One should book profit in sell side positions & should avoid new sell side positions in an oversold zone.

Positive Divergence are formed when price makes new low, but %R fails to make new low.

Negative Divergence are formed when price makes new high, but %R fails to make new high.

Moving Average Convergence & Divergence (MACD)

Developed by Gerald Appeal in 1970's.

MACD is a hybrid as it covers the trend leading indicator as well as trend following indicator.

MACD comprises two lines, the Fast Line & Slow or Signal Line.

Step

Calculate a 12 period exponential moving average of the close price.

Calculate a 26 period exponential moving average of the close price.

Subtracts the 26 period moving average from the 12 period moving average. (This is the Fast MACD Line)

Calculate a 9 period exponential moving average of the fast MACD line calculated above. (This is the Slow or Signal MACD Line)

MACD Benefits

As a trend following indicator, it will not be wrong for very long.

The use of moving average ensures that the indicator will eventually follow the movements of the underlying security.

MACD has the ability to foreshadow moves in the underlying security.

MACD divergence can be key factors in predicting a trend change.

MACD can be applied daily, weekly or monthly basis.

The standard setting for MACD is the difference between the 12 & 26 period EMA.

MACD can be tailored for each individual security.

For weekly charts, a faster set of moving averages may be appropriate.

For Volatile stocks, slower moving averages may be needed to help smooth the data.

Individual can set MACD to suit his or her own trading style, objectives & risk tolerance.

Use of MACD Lines

A. Moving Average Crossover

- MACD proves most effective in wide swinging trading markets.
- Go long when the fast line crosses above the slow line.
- Go short when the fast line crosses below the slow line.
- These signals are best when they occur some distance above or below the reference line.

Use of MACD Lines

B. Centreline Crossover

- A bullish centreline crossover occurs when MACD moves above the zero line and into positive territory.
- A bearish centreline crossover occurs when MACD moves below the zero line and into negative territory.
- The centre line crossover can act as an independent signal.

Use of MACD Lines

C. Divergence

- An indication that an end to the current trend may be near occurs when the MACD diverges from the security.
- A positive divergence occurs when MACD begins to advance & the security is still in a downtrend & make a lower reaction low.
- A negative divergence occurs when the security advances or moves sideways & MACD declines.
- Divergence are probably the least common , but are usually the most reliable & lead to the biggest moves.

Money Flow Index (MFI)

MFI considers volume action & on the basis of volume action, it attempts to measure the strength of money flowing in & out the security.

Also called as Smart Money Flow Indicator.

When day's average price is greater than previous day's average price, it's said **Positive Money Flow**.

When day's average price is less than previous day's average price, it's said **Negative Money Flow**.

Money Flow for a specific day is calculated by multiplying the average price by the Volume.

Positive Money Flow is calculated by summing the positive money flow over a specified number of periods.

Negative Money Flow is calculated by summing the negative money flow over a specified number of periods.

Money Ratio = (Positive Money Flow /Negative Money Flow)

$$MFI = 100 - \frac{100}{(1 + \text{Money Ratio})}$$

Overbought Zone : Above 80

Oversold Zone : Below 20

Interpretation

One should book profit in buy side positions & should avoid new buy side positions in an overbought zone.

One should book profit in sell side positions & should avoid new sell side positions in an oversold zone.

Positive Divergence : When price is making new lows, but MFI fails to break previous lows.

Negative Divergence : When price is making new high, but MFI fails to break previous high.

Bollinger Bands

Developed by John Bollinger in 1980's.

Created the bands as a means for anticipating price trends in a systematic way before price reversals occurs.

Belief: Volatility levels are dynamic & rarely static for a particular security.

Changes in price direction & momentum.

The use of three bands is crucial because the span between top & bottom to the middle simple moving average expands & contracts as volatility changes.

This helps traders recognize emerging price patterns, also improving the timing of entry & exit.

When combined with candle stick patterns as confirming indicators, Bollinger Bands asses the element of changing volatility to the study of the price trend.

Bollinger Bands display changes in Momentum, Volume & trader sentiment.

Interpretation

Big moves in price is witnessed on either side when bands tightens/ contracts as volatility lessens.

The upper band acts as area of resistance & lower band act as area of support.

When prices moves outside the band, it signifies strong breakout, hence continuation of the trend & sometimes emergence of new & strong trend.

Bottoms or tops made outside the band, followed by tops & bottoms made inside the band suggests reversal of the trend.

- How To Trade Using Technical Indicators? Technical Analysis For Beginners - Bing video
- How to Use Bollinger Bands® - Bing video
- Money Flow Index (MFI) | Technical Analysis for Stocks, Cryptos and Forex | BitScreener - Bing video
- How to trade using the MACD Indicator - Bing video
- What is MACD? The MACD Indicator Explained - Bing video
- How to trade using the RSI Indicator - Bing video
- How to use William % R - Indicator | Technical Analysis Episode 8 | William R Indicator - Bing video
- How to use the Stochastic Oscillator Indicator and How it Works - Bing video