

The Quant Pirates...Arrrrr

*An Introduction to Technical Analysis
By Vishal Shah*

New Website Features

- 📦 Forum → Wiki
- 📦 Mail
- 📦 RSVP System
 - 📦 UBS Trading Floor Event
 - 📦 VBA Excel Workshop

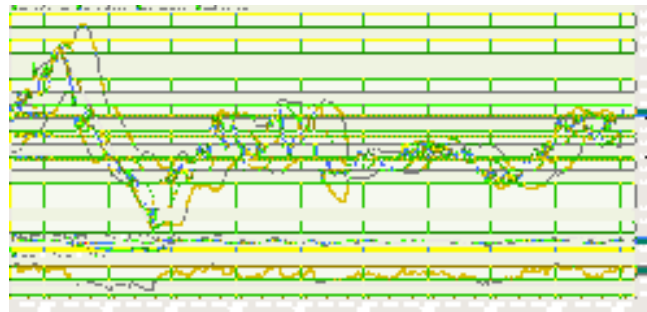
Membership Benefits

- ☒ Ability to do ApolloClap and get \$\$\$
- ☒ yourname@quantfs.com + 100MB
- ☒ First shot at new jobs
- ☒ Research opportunities
- ☒ Corporate Mingles
- ☒ Attend Member-Only events (like the VBA Excel workshop)
- ☒ QuantFS DVD

Upcoming

- ☒ Excel Workshop – VBA Programming
- ☒ Finance Society Quant Analyst
- ☒ UBS Floor Trading
 - ☒ Largest Trading Floor in world. 10 Spots.

- ☒ Elections next meeting. More info on site by next Tuesday



AN INTRODUCTION TO TECHNICAL ANALYSIS

By Vishal Shah

AGENDA

- The types of charts
- Candlestick formations
- Support, Resistance, Trending Channels
- Moving Averages
- RSI
- Stochastics
- Bollinger Bands
- MACD
- Fibonacci Retracements
- Conclusion

WHAT CHARTS TO USE

- Type: Candlestick
- Packages: Any
- Time: Depends
 - FX: 4-Hour, Daily, Weekly, Monthly
 - Equities: 15 minute-Weekly
 - Treasuries: Daily, Weekly, Monthly
 - Commodities: Daily, Weekly, Monthly



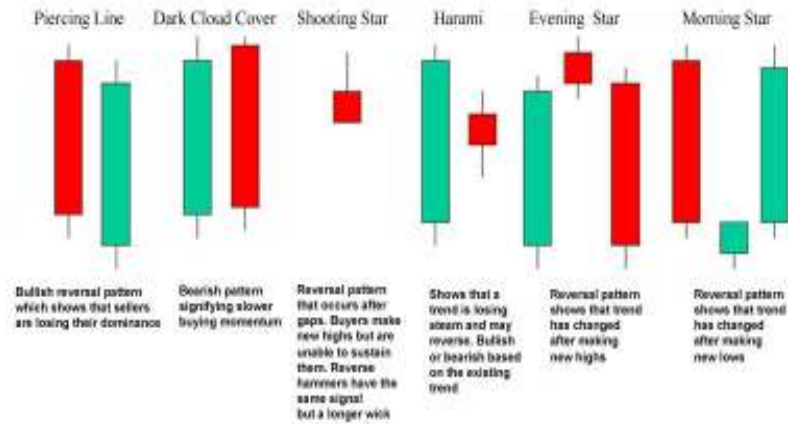
CANDLESTICK FORMATIONS

- Helps anticipate the next move in the market
- Based on daily highs, lows, open, and close
- The basic Candlestick:



CANDLESTICK FORMATIONS

Candlesticks – Important Patterns



CANDLESTICK FORMATIONS

Candlesticks – Important Patterns



SUPPORT & RESISTANCE



TRENDING CHANNEL



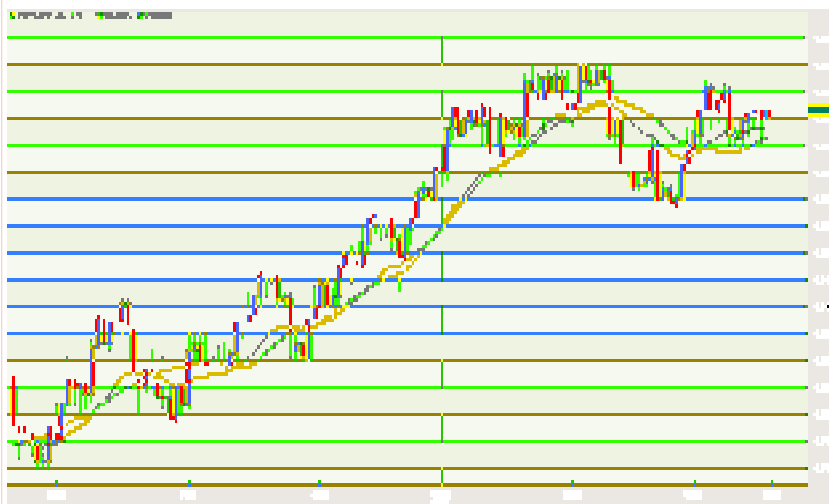
MOVING AVERAGES

○ Concept & Types:

- SMA: A simple moving average
- EMA: Exponential moving average
- An average of a certain number of preceding periods' price action (usually the close)
- For instance: A 12 Day SMA implies the average of the last 12 days' price action; plotted as a continuous line
- 12 Day EMA is similar but gives weight to the more recent price action; weight is calculated using a more complicated algorithm
- The most used periods are 20, 50, 100, 200
- There are also more complicated forms: Smoothed Envelope, Weighted, etc., but they are not as common



MOVING AVERAGES



RSI

- RSI or Relative Strength Index
- What it is: an Oscillator
 - Shows strength of current price action relative to recent price action; an indicator of short term momentum
 - Gives bias before the market actually changes price direction
 - Based on a regression to a mean; price must revert to a mean and not stray many standard deviations
 - RSI calculates the strength of the upward candles vs. the downward candles
 - A common parameter: 14 periods
 - Measures overbought/oversold levels and divergence
 - >70 = overbought, <30 = oversold



RSI



RSI



STOCHASTICS

- A range-bound market oscillator
- Like RSI, measures deviations from the norm
- More complicated formula:
 - 3 components: %K line, %D line, number of periods
 - %K measures relative strength; just like RSI
 - %D is a moving average of the %K line
 - Number of periods indicate how many previous periods to include in analysis
 - Common Setting: 14, 5, 5
 - Significant signals: >80 = Overbought, <20, Oversold, Crossover of %K through %D, Divergence

STOCHASTICS

%K =	100 × ($\frac{\text{Recent Close} - \text{Lowest Low (n)}}{\text{Highest High(n)} - \text{Lowest Low(n)}}$)
%D =	3-period moving average of %K		
(n)=	Number of periods used in calculation		



STOCHASTICS



STOCHASTICS



BOLLINGER BANDS

- A moving average with deviated moving averages
- Used in range-bound markets
- Usually the initial moving average is omitted
- The deviated MAs are no more than 2 standard deviations from the mean
- Serves as a support/resistance function as long as the bands are not widening

BOLLINGER BANDS



BOLLINGER BANDS



MACD

- An oscillator derived from EMA
- Two lines
 - One determines the difference between 2 different EMAs (MACD line)
 - The second is an EMA of that line (Signal line)
 - Histogram: a simple visual representation of the difference between the MACD line and the Signal line
 - Zero-point on histogram is referred to as center-line
 - Common parameters: 12, 26, 9

MACD



MACD



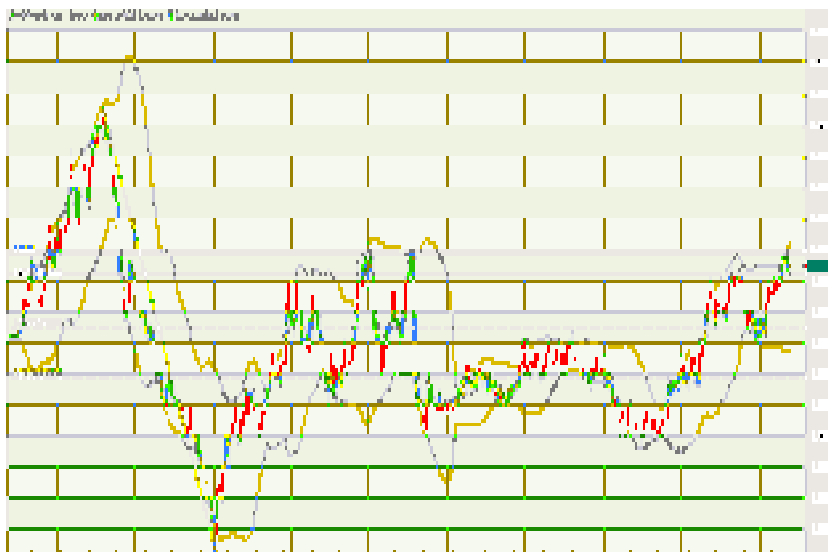
FIBONACCI RETRACEMENTS

- Derived from Fibonacci numbers that are recurring in all walks of life
- Levels at which the market is expected to retrace after trending
- Serve as supports and resistances
- The most common figures are 23.6%, 38.2%, 50%, and 78.6%

FIBONACCI RETRACEMENTS



FIBONACCI RETRACEMENTS



CONCLUSION

- User Beware
- Technical Analysis is a framework, not a market mover
- At times of event risk, technical analysis will fail:
 - MACD, RSI, Stochastics, will continue in their direction
 - Fibonacci may not retrace
 - But price action will eventually “settle” at a technical level
 - It is recommended to trade technicals at times of low event risk
 - Do not leverage highly when technical trading
 - It is BEST to combine technical analysis with Fundamental Analysis for the “complete picture”

