Market sentiment

Market sentiment is the feeling or tone of a market, or its crowd psychology, as revealed through the activity and price movement of the securities traded in that market. For example, rising prices would indicate a bullish market sentiment, while falling prices would indicate a bearish market sentiment.

Contrarian Investing

Contrarian Investing is an investment strategy that is characterized by purchasing and selling in contrast to the prevailing sentiment of the time. A contrarian believes that certain crowd behavior among investors can lead to exploitable mispricings in securities markets.

Strategy Types

Mean reversion: Mean reversion strategies rely on the theory that prices usually move back towards their mean.

Momentum: Momentum strategies rely on the theory that there are continuations in trends and a certain force of motion in a moving body that can keep pushing a price away from it's mean.

Market Efficiency

Market efficiency: Market efficiency is the degree to which stock prices reflect all available, relevant information.

The efficient market hypothesis (EMH): is an investment theory that states it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information.

Weak efficiency: This type of EMH claims that all past prices of a stock are reflected in today's stock price. Therefore, technical analysis cannot be used to predict and beat a market.

Semi-strong efficiency: This form of EMH implies that all public information is calculated into a stock's current share price. Neither fundamental nor technical analysis can be used to achieve superior gains.

Strong efficiency: This is the strongest version, which states that all information in a market, whether public or private, is accounted for in a stock price. Not even insider information could give an investor an advantage.

Liquidity

The importance of having a market

For companies:

For Investors:

Liquidity

Liquidity describes the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price.vv

Asset liquidity vs Market liquidity?

Market Making

Market Maker: A market maker accepts the risk of holding a certain number of shares of a particular security in order to facilitate trading in that security. Each market maker competes for customer order flow by displaying buy and sell quotations for a guaranteed number of shares. Once an order is received, the market maker immediately sells from its own inventory or seeks an offsetting order.

The Spread

A spread is the difference between the bid and the ask price of a security or asset.
Example: current quote is $20.20 by $20.30, then the spread is $0.10.

What is making the spread? and what is paying the spread?

Passive vs Aggressive

Passive: sending a limit order and waiting to get a fill on it.
Agressive: sending a limit or market order that will instantly get filled.

Providing liquidity to the markets

**Adding (providing) vs Removing (taking) liquidity?

Example of taking vs providing liquidity:

Current quote is $20.20 by $20.30.

Buy market orders and limit orders set at $20.30 or higher are taking liquidity.

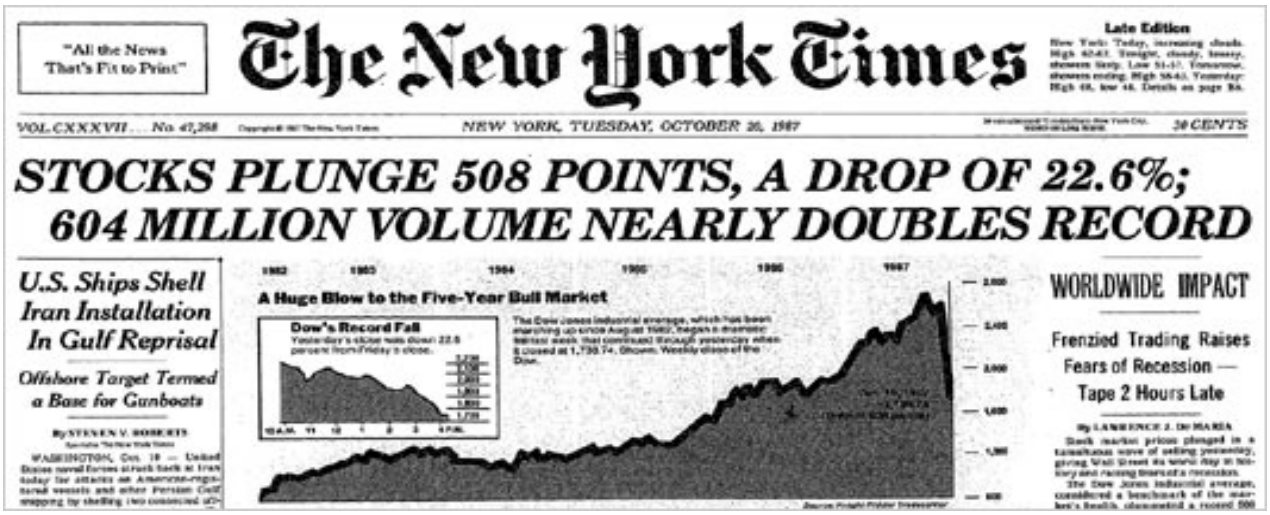
Buy limit order set at $20.29 or lower are providing liquidity.

History lesson on the evolution of exchanges

Market delays and intervention of market makers created a demand for a faster and specialist free exchange.

This led to the birth of Instinet, the first Electronic communication network (ECN). Instinet was founded by Jerome M. Pustilnik and Herbert R. Behrens and was incorporated in 1967 as Institutional Networks Corp.
The founders aimed to compete with the New York Stock Exchange by means of computer links between major institutions, such as banks, mutual funds, and insurance companies.

Then Black Monday happened.



"All the News That's Fit to Print"

The New York Times

Late Edition

VOL. CXXXVII... No. 47,288 NEW YORK, TUESDAY, OCTOBER 20, 1987 50 CENTS

STOCKS PLUNGE 508 POINTS, A DROP OF 22.6%; 604 MILLION VOLUME NEARLY DOUBLES RECORD

U.S. Ships Shell Iran Installation In Gulf Reprisal

Offshore Target Termed a Base for Gunboats

A Huge Blow to the Five-Year Bull Market

Dow's Record Fall

WORLDWIDE IMPACT

Frenzied Trading Raises Fears of Recession — Tape 2 Hours Late

During the crash of 1987, electronic trading systems allowed trading when brokers and market makers were unwilling to answer their phones during the free-fall.

Market Maker collusion was the last straw for regulation change.

In 1994, a study by two economists showed possible Market Maker Bid/Ask Spread price collusion resulted in an anti-trust lawsuit against NASDAQ. As part of NASDAQ's settlement of the antitrust charges, NASDAQ adopted new order handling rules that integrated ECNs into the NASDAQ system.

Shortly after this settlement, the SEC adopted Regulation ATS, which permitted ECNs the option of registering as stock exchanges.

ECN (Electronic Communication Network)

This is an electronic system that accepts/dessiminates orders entered into it and permits the orders to be executed against.

As ECNs were permited to act as exchanges, Instinet and Island exploded in popularity. Archipelago (ARCA) Exchange was born and new ECNs emerged.

Archipelago (ARCA) exchange

Founded in 1994 by Stuart Townsend and Gerald Putman.
First orders accepted on January 20, 1997.
Brand new pricing scheme that changed everything.

The new pricing scheme went as follow:
-Rebate for adding liquidity
-Fee for removing liquidity

Example: ARCA: add $0.002, remove -$0.003
Incentive for people to Add liquidity on ECNs instead of on the actual exchange.
Incentive for people to remove liquidity (even though more expensive) on ECNs because there is more liquidity there.

If you can't beat them. Buy them.

Instinet in 2002 merged with the Island ECN, renaming the Island technology platform Inet.

In 2005 NASDAQ buys Inet

In 2006 NYSE buys Arca

Sample Fee Structure of current ECNs

ECN	Add	Remove
NSDQBX	$0.0025	$0
EDGA	$0.0005	$(0.0002)
EDGX	$ (0.0020)	$0.0029
NYSE	($0.0013)	$0.0031
ARCA	($0.0020)	$0.0030
BYX	$0.0018	($0.0015)
BATS	($0.0020)	$0.0030

Level 2 example

Smart Order Router (SOR)

Smart order routing (SOR) is a process used in trading applications to execute incoming liquidity into liquidity providers following routing rules. The routing rules usually follow business needs like best execution or internalization.

This new microstructure created an environment that was advantageous to the person who was faster. Since there were alot of different ECNs, and they were all located at different geographical locations, the person who was able to send his orders the fastest to that location would then have priority in that queue (remember if too people have an order at the same price, the person who came first has priority to get filled first).

The new ECN pricing scheme also created opportunity to make ALMOST risk free money by buying a stock on an ECN that paid you to add liquidity and then selling instantly back the shares on another ECN that either paid you or charged you less then the original ECN you bought on.

Latency

Delay between a trading decision and it's implementation

- NYSE pre-1980: 2 minutes
- NYSE 1980: 20 seconds
- NYSE 2007: 100s of milliseconds
- NYSE Arca 2009: 1 millisecond
- Now: in the nanoseconds

Why latency is important?

- You want the most recent information to make your trading decision
- Competitive advantage/disadvantage (the first guy makes the profits)
- Time priority rules in microstructure
- Minimizing Transaction cost
- Typical high frequency trading profits: $0.001 - $0.002

Dark Pools

Dark pools are private exchanges or forums for trading securities; unlike stock exchanges, dark pools are not accessible by the investing public. Also known as "dark pools of liquidity," they are so named for their complete lack of transparency. Dark pools came about primarily to facilitate block trading by institutional investors, who did not wish to impact the markets with their large orders and consequently obtain adverse prices for thveir trades.

Darkpool facts:

- Around since the 1980s
- 15% of all US stock trades in 2014 were on dark pools

Dark pools: Pros

- Reduced market impact: market impact is significantly reduced for large orders.
- Lower transaction costs: Transaction costs may be lower, since dark pool trades do not have to pay exchange fees.

Dark pools: Cons

- Pool participants may not get the best price: The lack of transparency in dark pools can also work against a pool participant, since there is no guarantee that the institution's trade was executed at the best price.
- Vulnerability to predatory trading by HFTs: The recent controversy over dark pools has been spurred by Lewis' claims that dark pool client orders are ideal fodder for predatory trading practices by some HFT firms, which employ tactics such as "pinging" dark pools to unearth large hidden orders, and then engage in front running or latency arbitrage.

Predatory Algorithms & Gaming Algorithms

- Finding Dark orders and front run them.
- Deciphering other algorithms and gaming them.

Valuation methods

Fundamental analysis: Evaluating a stock's price based on it's revenues, earnings, future growth, return on equity, profit margins, etc. Evaluation is done by examining the a company's income statements, it's earning releases and balance sheet.

Technical analysis: Forcasting future price direction by analysing past price and volume data. This is mainly done by analysing charts and indicators.

The importance of which valuation method you use depends on the timeframe you're trading. When you are trading long-term it is more important to look at fundamentals. When you are trading short term it is more important to look at technicals. This does not mean you should only use technicals or fundamentals; most of the time you want to use both.

Fundamental Vs. Technical Analysis

- Charts vs. Financial Statements
- Time Horizon
- Trading Versus Investing
- The Critics
- Can They Co-Exist?

Volume weighted average price (VWAP)

The VWAP is one of the most popular indicators used by institutions to benchmark their execution price throughout a period. It is calculated by multiplying every price traded times the quantity traded, adding them all up and then dividing that by the total number of shares traded during the period.

Fundamental Analysis

Fundamentals and macro-events can represent catalyst moments for stocks. It can either be a merger between two companies, a company missing hugely on earnings or a change in regulation. Any of those events could cause huge movements and change of direction for a stock.

Investors look at these events (change in a fundamental/macro metric) to make new evaluations and investment decisions.

Traders look at these events to manage risk and to trade them (event-based trading).

Fundamentals:

When using fundamental analysis we are trying to evaluate the worth of a company. By doing this we are trying to figure out what it's fair value is. If we believe that its value is higher than it's current market value we would buy shares in the company as we expect the shares to increase in price. In this analysis, we believe that market value will converge to fair value over time.

Fundamental analysis is done by examining the financial statements that companies are obliged to release on a quarterly basis. These are the:

- Balance sheet
- Income statement
- Cash flow statement

You can find all company statements on the Securities and Exchange Commission at the following link:

https://www.sec.gov/edgar/searchedgar/companysearch.html

There are different reports one can find on the SEC website. Here are some notable ones where you can find financial statements included.

SEC Required Filings

Form S-1: Registration statement filed before the sale of new securities to the public. This includes financial statements, risk assessment, underwriter identification, and the estvimated amount and use of the offerings proceeds.

Form 10-K: Required annual filing that conveys information about the company's business, management, legal matters, audited financial statements. This report has many similarities with the annual report that is given to shareholders.

Form 10-Q: American public companies are obliged to submit this form on a quarterly basis with updated financial statements but unlike 10-K forms, 10-q forms do not have to be audited.

Form 8-K: Public companies must submit this form when there are important events such as important asset acquisitions and disposals, changes in management, its financial statements or markets in which its securities trade.

Forms 3, 4 and 5: This filing includes information about the change of beneficial ownership by a company's officers and directors.

Financial Statements

Balance Sheet:

This form reports on the company's assets, liability and owners equity. It also has a section for management discussion and analysis.

Assets = Liabilities + Equity Equity = Assets - Liabilities

Equity : The value of a company after all liabilities (debts) are paid.

Assets : The tangible (equipment, buildings, etc) and intangible (intellectual property, etc) resources that a company has, that it can use to make money.

Liabilities : Debts or obligations owed to another party. Examples of liabilities include: accounts payable, loans, bonds, tax payable, etc. Liabilities are an indication of future payments that the company will have to pay off. Current liabilities are short term (needs to be paid within the year) and Non-current liabilities are long term (can be paid after one year).

ABC Company
Balance Sheet
December 31, 2016

Current Assets		
Cash	$	60,000
Petty Cash		15,000
Investments		200,000
Supplies		4,000
Inventories		12,000
Accounts receivable		80,000
Prepaid insurance		3,600
Pre-paid expenses		1,500
Total Current Assets		**376,100**

Property, plant & equipment	
Equipment	200,000
Land	150,000
Buildings	350,000
Leasehold improvements	40,000
Less accumulated depreciation (Negative Val	-12,300
Property, plant & equipment	**727,700**

Intangible Assets	
Goodwill	43,000
Trades name	20,000
Patents	23,600
Total Intangible Assets	**86,600**

Total Assets	$	**1,190,400**

Current Liabilities		
Accounts payable	$	5,000
Wages payable		3,000
Interest payable		100,500
Notes payable		2,600
Income taxes payable		34,000
Unearned revenue		2,300
Total Current Liabilities		**147,400**

Long-term Liabilities	
Mortgage payable	40,000
Notes payable	107,000
Bonds payable	550,000
Total	**697,000**

Stockholders' Equity	
Common stock	110,000
Retained earnings	230,000
Accumulated other comprehensive income	6,000
Total Stockholders' Equity	**346,000**

Total Liabilities & Stockholder Equity	$	**1,190,400**

Cash flow statement:

Income statement (earning statement):

This form reports on the company's financial performance. This is the form where the earnings are disclosed. This form will show the company's:

- Revenue
- Expenses
- Net profit

ABC Company
Income Statement
For the year ended December 31, 2016

Revenue	$	$
Sales	350,000	
Interest Revenues	50,000	
Total Revenues		**400,000**
Expenses		
Salaries	105,000	
Rent	35,000	
Utilities	4,000	
Tax expenses	12,000	
Insurance	35,000	
Advertising Costs	20,000	
Total Expenses		**211,000**
Net Profit		**189,000**

This form reports on the company's cash flow (cash entering the company and cash exiting the company). Cash flow is divided into 3 parts, cash from:

- Core operations
- Investing component
- Financing component

ABC Company
Cash Flow Statement
For the year ended December 31, 2016

Cash Flow from Operating Activities		
Net income	$	190,000
Add: depreciation expense		60,000
Increase in accounts receivable	-	50,000
Decease in inventory		32,000
Decease in accounts payable	-	34,000
Net Cash Flow from Operating Activities		**198,000**
Cash Flow from Investing Activities		
Capital expenditures	-	50,000
Proceeds from sale of property		160,000
Net Cash Flow from Investing Activities		**110,000**
Cash Flow from Financing Activities		
Borrowing		45,000
Repurchase of stock	-	215,000
Dividends	-	110,000
Net Cash Flow from Financing Activities	-	**280,000**
Net increase in cash		28,000
Cash at Beginning of the year		-
Cash at the end of the year	**$**	**28,000**

Fundamental Ratios

Equity Valuation basic tools and metrics

Analysts and investors look at different tools, ratios and metrics in order to value the price of a stock. As traders we won't value a stock but we will review the tools and metrics that other people use to value the stock so we can predict it's movement when fundamental data changes.

Investors use equity valuation to find what the fundamental value of a stock is.

Value is defined as the rational value that investors would give to an asset if they had complete information about the nature of the stock.

Investors will use different tools and valuation models to define what the value of a stock is and then take a position by comparing their findings with the market price of the stock. The greater the deviation between market prices and valuation - the greater the likelihood of an investor taking a position.

Statement Examples:

Initial Public Offering of 3 companies			
	ABC	DEF	XYZ
Shares Outstanding	30,000,000	90,000,000	10,000,000
IPO Price	$1.5	$1.5	$1.5

All 3 companies get a loan from the bank right away of $2 million $5 million and $3 million respectively.

Exercise: Fill in their initial balance sheet.

Initial Balance Sheet			
	ABC	DEF	XYZ
Assets			
Liabilities			
Equity			

End of Fiscal Year 1 Income Statement			
	ABC	DEF	XYZ
Net Profit/Earnings	$2,000,000	$5,000,000	$1,000,000

End of Fiscal Year 1 Cash Flow Statement			
	ABC	DEF	XYZ
Dividends	$(2,000,000)	$(1,000,000)	-

Exercise: Fill in the information for the End of Year Balance Sheet and calculate the appropriate Ratios.

End of Fiscal Year Balance Sheet			
	ABC	DEF	XYZ
Assets			
Liabilities			
Equity			

Numbers mean nothing by themselves. Especially when comparing companies of different sizes to eachother (or even comparing a company to itself; since a company's own size can fluctuate throughout time). Because of this most of the time we will be looking at ratios in order to standardize these numbers.

Ratios			
	ABC	DEF	XYZ
Market Price	$2	$2.5	$5
Market Cap			
Book Value			
Book/Share			
P/B			
EPS			
P/E			
ROE			
Dividend			
Dividend %			

Ratios:

There are many types of ratios that can be derived from the financial reports. These ratios can be categorized as follows:

• **Activity ratios:** This category includes ratios that measure asset utilization such as Turnover ratio, Total assets turnover.

•**Liquidity ratios:** Liquidity ratios: Measures ability of a company to pay short-term.

•**Solvency ratios:** Conveys information on the company's ability to pay long-term debt.
E.g. Debt to Equity ratio: (Total Debt/Total Shareholder's equity) – Indicates company's reliance on debt as a source of financing

•**Profitability ratios:** Profitability ratios: Provides information on how well the company generates profits from its operations.
Return on Equity: Net income/ average total equity

•**Valuation ratios:** Provides investors information about relative value of stocks.

Essential Terms:

Shares outstanding: All the shares that have been issued by the company.

Market capitalization: This is the market value of a company's outstanding shares. You can get this value by multiplying the price of the stock times the quantity of shares outstanding. In general when we are categorizing companies in terms of their capitalisation we use these terms:

Small cap: $300 million to $2 billion
Mid cap: $2 billion to $10 billion
Large cap: over $10 billion

Earnings: This is the net income (after-tax) that a company produces in a specific period. Usually we look at quarterly income as well as yearly income. A company's earnings is one of the most important things analysts and investors look at.

Dividends: A distribution made to shareholders of a corporation. This can be given from earnings, retained earnings or other cash that the company has. Changes to dividends and dividend growth has a huge impact on some stocks.

Earnings per share (EPS): This is by far the most important ratio in fundamental analysis. This is calculated by dividing the total earnings by the number of shares. It tells us the portion of the earnings that is alocated to each share.

Price per earnings (P/E): This tells us how much we are paying for every dollar of revenue the company currently generates. Calculation is done by dividing the current price by the company's EPS during the last 12 months.

Return on Equity (ROE) : This ratio is a measure of performance that calculates the amount of profits made by each doller of shareholder's equity.

Book value: Calculation = Tangebile assets - Liabilities. It is basically the amount of cash that would be left if the company sold everything it owned and payed off all it's debt. This is also the shareholder's equity.

Book value per share: This tells us the per share value of a company. It is calculated by dividing the book value by the outstanding shares.

Price to book (P/B): This is used to gage a company's market value to it's book value. It is calculated by dividing the stock's price by last quarter's book value per share.

Debt to equity (D/E): This ratio shows how much of the company's assets are from debt versus from equity. The higher the ratio, the more leveraged the company is (meaning the more debt it is using to finance it's operations).

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Liabilities			
Equity			

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Current vs Expected

The value of a company is not only based on how much it is making now but on how much it is making now plus how much it is expected to make in the future. Because of this analysts make forcasts on how much they expect the company to make in the future and base their evaluation on those numbers as well.

EPS next Year: This is the expected EPS based on the expected earnings for the company for next year (based on street estimates) and today's stock price.

Forward P/E: This is similar to the regular P/E ratio, except that the price of the stock is divided by the “expected” earnings per share of next fiscal year.

Some investors like to buy companies that are already making steady income and some investors like to invest in companies that haven't even made a penny yet but that are expected to make a killing in the future. We categorize these companies as:

Growth & Value Companies

Growth company: A company that is not generating as much profit now as it is expecting to generate in the futur. These companies usualy have high P/E and low Dividend yield.

Value company: A company that is already generating the profits it expects to stay at in the future. These comapnies usualy have low P/E and High Dividend yield.

What works best for which Strategy		
	Mean-Reversion	Momentum
Growth stock		
Value stock		

Different ways of analysis:

There are many different ways of analysing the statements and each way can be valid under diferent circumstances. The most popular ways are:

- Trend analysis
- Benchmarking
- Dividend discount

Trend Analysis:

In trend analysis you want to look at the trend of metrics and ratios for a specific company over time. Analysing this data you can gage if the company is improving on their numbers and if there is a positive trend in their numbers. You are using trends as you would use in technical analysis on prices but now on actual fundamentals. If the trend is strong in one direction, that could signify a continuation in price direction. If there is a break in the trend, that could signify a reversal in price direction. You can also look for support and resistance levels in the ratios which can tell you levels where supply or demand for the stock should increase.

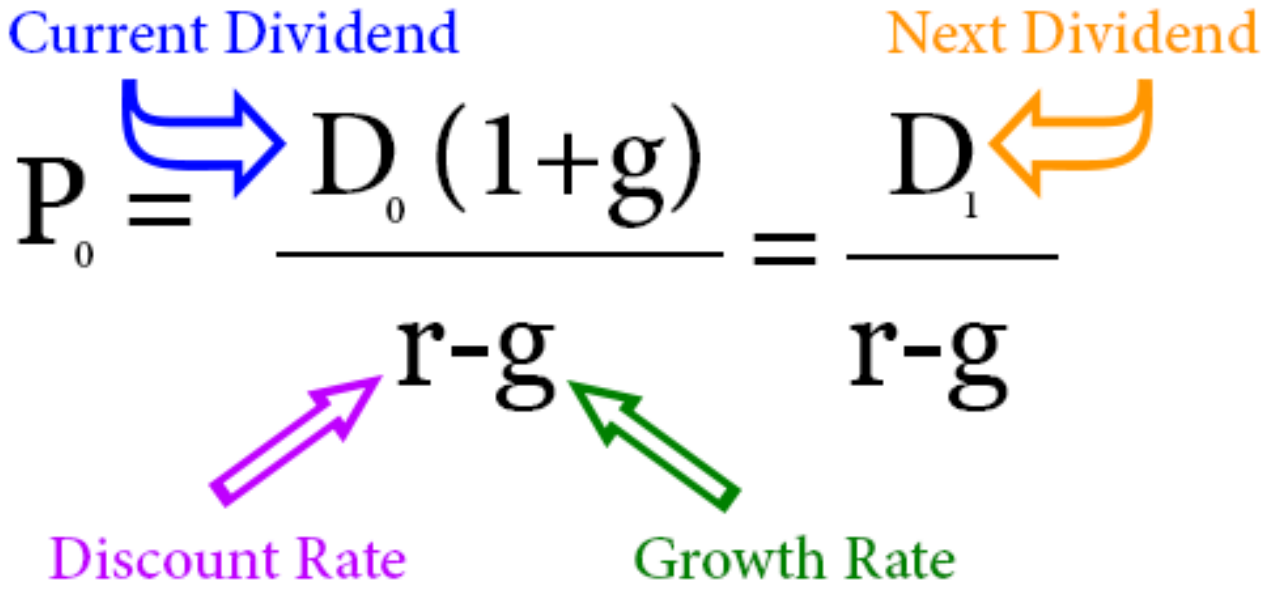
Benchmarking:

Benchmark is the process of comparing the fundamental ratios against a company's peers within the same industry.

When you are evaluating a company's ratios to it's peers in the same industry you are looking for the company that offers you the best metrics for each dollar paid. You are comparing a group of symbols to find the one that is most undervalued.

Dividend discount model (DDM):

In this method we want to value the price of the stock by adding up all the payments the stock will make us in the futur. We are adding up the Net Present Value of each future dividend payment expected in order to calculate the stock's present value.



Other Important Metrics

Insider: Any person who is a director or a senior officer of the company. Also any person who owns more than 10% of a company is considered an insider.

Insider Ownership: This is equal to the total number of shares owned by insiders divided by the shares outstanding.

Insider transactions: This is the change in insider ownership in the past X months. This can be used to get an idea about recent insider transactions.

Institutions: Mutual funds, hedge funds, pension funds, insurance companies, banks or other large financial organizations that manage funds.

Institutional ownership: This is equal to the total number of shares owned by institutions divided by the shares outstanding.

Institutional transactions: This is the change in institutional ownership in the past X months. This can be used to get an idea about recent institutional transactions.

Float: The shares that are available for trading on the market. This equals the shares oustanding minus all shares held by the company, controlling-interest investors, insiders or the company's stock ownership plan.

Short float (short interest shares): The number of shares that are curently short on the market. It is calculated by dividing the total number of shares short by the float.

Short ratio (short interest ratio): The short interest gives us an indication of how many days it would take for all the shorts to cover. To calculate this ratio you need to divide the total amount of shares short by the average daily volume.

What works best for which Strategy		
	Mean-Reversion	Momentum
Growth stock		
Value stock		
Low Float		
Low Instituational		

Stock Splits: This is a way to divide an existing share into multiple shares which increase shares outstanding. Technically, the shareholder holding this stock has more shares but the value of his or her holding remains the same. Splits are expressed in ratios such as 2 for 1. Meaning that for each stock held, you will receive two.

Example: You hold 100 shares of ABC @ $30. After a 3 for 1 stock split, the holder will now have 300 shares that are now worth $10 each.
The arithmetic is as follows:
$30 x 100 shares = $10 x 300 shares = $3000.

Some companies use stocks splits when they want to keep the stock price at a certain price range.

Reverse Stock Split: After a reverse stock split, there a fewer number of shares that trade at a higher (again market value of holdings should remain unchanged). There are different reasons why companies conduct reverse stocks splits. For one, there is a minimum price that a company's stock needs to trade at to stay listed on the exchanges. Also some companies just don't want to be perceived as being of lower investment grade (since some people perceive low stock prices with low quality).

Effects of such events on Financial Ratiosv
Cash dividends: decrease assets (cash) and shareholders' equity (retained earnings). All else equal, the decrease in cash will decrease liquidity ratio and increase debt/equity ratio.

Stock dividends and stock splits have no effect on these ratios as these events do not affect the company's value. All it changes is shares outstanding

*** It is of extreme importance for short term traders to understand the incidence of dividends on their portfolio. Being either long or short on ex-dividend date has a direct effect on the price.

- If you are long a stock on ex-dividend date, you will receive the dividend but the stock you're holding will probably fall by the same amount.

- If you are short a stock on ex-dividend date, you will have to pay the dollar value of the dividend out of your own pocket. As mentioned earlier, the price of the stock will probably decrease by the amount of the dividend. Therefore, don't forget to adjust your exit appropriately.

Macro-Events

Other than corporate events, traders and investors need to understand what certain marco-economic events mean and how it will impact the markets.

Since macro-events usualy have an impact on the whole market, let's look at how we track the performance of the markets (through Indexes):

Indexes:

The Dow Jones Industrial Average aka "The Dow":

Named after founder, Charles Dow and Edward Jones, this index was invented in 1896.

Used to follow the overall US economy, it incorporates 30 companies

How the index is measured:
Price weighted: Which translates to the higher the stock price, the greater the weight it will have in the index.

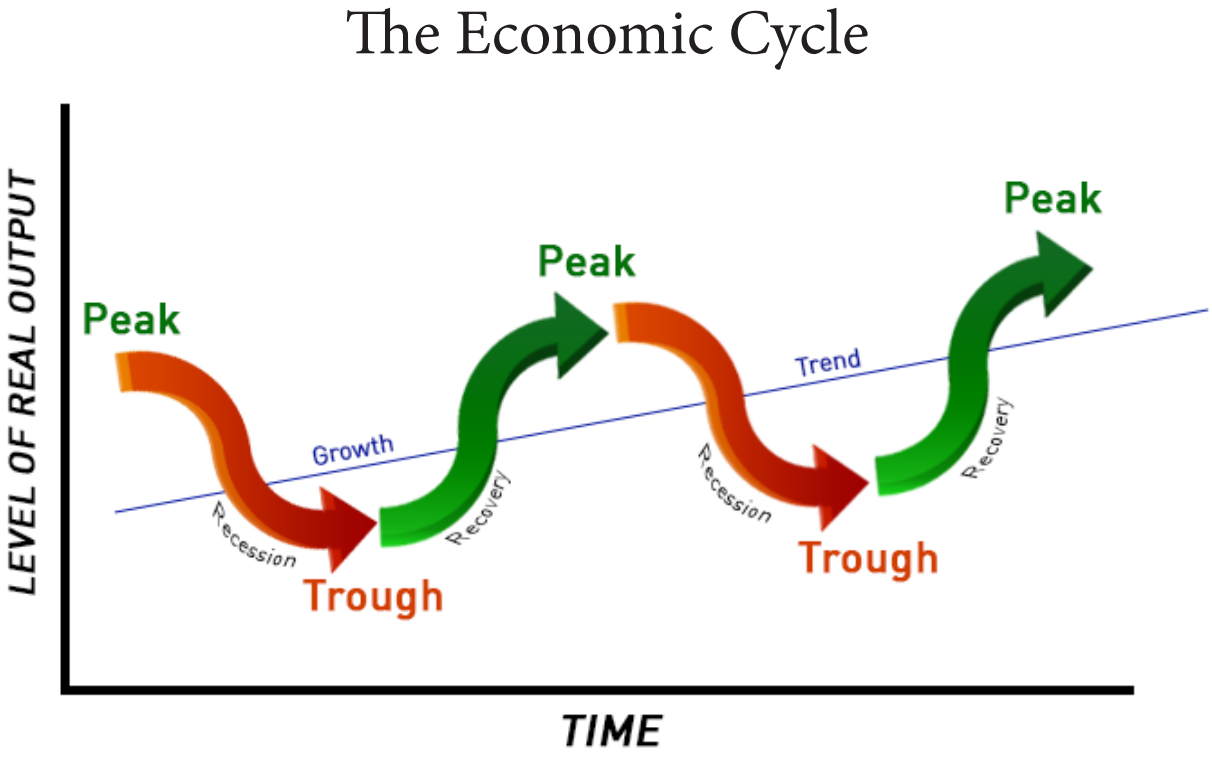
S&P 500 Index – Standard and Poor's 500 Index:

This index is based on the market capitalization of 500 large companies listed on NYSE or NASDAQ. The index is market-cap weighted which gives higher weighting to larger companies. This weighting methodology is better than the one used by The Dow. This index is considered the best index that represents the US stock market.

Economic Cycle

Now it is important to know that the markets reflect the growth in the economy and that the economy grows in cycles.

The economy goes through four different cycles known as business cycle stages:



Expansion:
Between trough and peak.
Economy is growing.
Positive Gross Domestic Product which measure economic output.

Peak:
Transition period into contraction.

Contraction:
Starts and Peak and ends at trough.
Economic growth diminishes.
GDP falls (when GDP becomes negative, it is considered a recession.)

Trough:
Stage where the economy transitions from contraction to expansion.

What represents a stronger economy:

- Increase in economic output (GDP)
- Decrease in unemployment
- Increase in inflation
- Increase in investments (capital expenditure)
- Political stability

Growth has to occur in a stable and healthy manner in order to avoid a crisis. To do this the government has to set up ways to control this growth. The 2 main ways available are through monetary policy and Fiscal policy.

Monetary Policy

Monetary policy is the process of:
•Supplying currency
•Setting interest rates

In the U.S. monetary policy is managed by The Federal Reserve System (The Fed) which is their central bank.

Central bank: An institution that manages currency, money supply and interest rates for a country. The role of this institution is to control the monetary system in order to reduce economic crises.

The Fed is a private organization that was created in 1910 through a secret meeting at a J.P. Morgan estate between 6 of the largest bankers (including representatives from the Rockerfellers and Rothschild). Together they wrote "The Federal Reserve Act" and were able to convince the government to sign it into law in 1913. Since The U.S. had a series of financial panics in the beginning of the 20th century, it was easy to convince them to hand over the Monetary powers to a group that could stabilize the economy and remain independent of politics. At that point the control of the money supply went from the government to this private institution which now had the power to issue currency, set interest rates and bailout banks. All of this while giving government very little oversight and no way to overule their actions.

The Fed is composed of 12 regional banks and 2 boards:
•The Board of Governors (7 members appointed by the president)
•The Federal Open Market Committee (the 7 members of the Board of Governors, the president of The Fed of New York, and 4 of the other regional banks.

The Board of Governors is responsible for setting the interest rate and reserve requirements by banks.

The Federal Open Market Committee (FOMC) is responsible for deciding on the direction of monetary policy and for open market operations (buying/selling government securities -> selling securities decreases the money supply and vise versa).

Federal Open Market Committee (FOMC) :

The FOMC hold eight meetings per year where they review the state of the economy and decide on the appropriate type of monetary policy to follow.

They do this by supplying currency, setting up rules for banks and MOST importantly loaning money to banks and setting the interest rates for those loans.

Since banks will in turn lend this money out to their clients (businesses & individuals), the lower the rate the more banks will lend and the more money goes into circulation. Since banks set their interest rates at a certain percentage point over the interest rate that they are charged when the Fed changes the interest rates so do the banks. This gives The Fed enormous power over the money supply.

The Fed also sets the amount of money that a bank needs to hold in reserve. The lower the reserve required the more money is in circulation.

The Fed also sets the rate at which other banks lend to each other. Again the lower the rate the more banks can borrow from each other which lead to more money being in circulation.

The Fed can also change the supply of money by buying/selling government bonds. If they buy government bonds, they are increasing the supply of money and decreasing interest rates.This is quantitative easing.

The more money supply there is, the higher there is inflation (inflation is the increase in the general price level of goods and services), since more money leads to more demand which leads to higher prices. Therefore The Fed has to be careful in the way they inject money into the economy.

FOMC meetings :

Why do investors care about these meetings?
Because money supply affects spending which in turn affects the economy and because of this, there is an inverse relationship between the stock market and interest rates.

As rates increased, stock prices SHOULD fall.
As rates decrease, stock prices SHOULD rise.

Fiscal Policy:

This is the power of the government to raise/reduce taxes.

Higher taxes -> less money in circulation

Lower taxes -> more money in circulation, more spending

Taxes are used by government to pay everything. When they don't raise enough money through taxes they go into deficit by selling loans (bonds) in the market.

Importance Reports:

Many reports come out at different frequencies that track the economic factors that we have talked about. These reports give an indication of how the Fed might change its policies in the future and thus are widely followed. These reports include:

- EIA Petroleum Status Report
- Jobless Claims Report
- Housing Market Index
- Consumer Sentiment Index

EIA Petroleum Status Report:

The Energy Information Administration report is a weekly report that comes out every Wednesday. It provides weekly information on petroleum inventory changes. This gives us an overview of the quantity of crude oil reserves held and produced by the US domestically and abroad. This gives us a huge indication for current oil prices.

Jobless Claims Report:

New unemployment claims are reported weekly. This report shows the number of new individuals that have signed up for unemployment insurance. Rising/decreasing trend hints at a decaying/improving labor market.

This is important for traders/investors for many different reasons.
Household spending is important to keep the economy running. The stronger the job market the stronger the economy. Naturally, if jobless claims increase it could be an indicator of a weaker economy.

However, as like in everything else, balance is important. If jobless claims fall too much, this could also be bad for the economy as it means that employers will have to pay their current employees over-time wages, offer higher salaries to attract new employees. Generally, employers will have to pay more in labour costs because there are not enough workers (Supply and Demand). This will lead to wage inflation which represents bad news for the stock market.

If salary inflation looks too strong, the Fed will most likely increase interest rates to calm down the economy which will lead to a drop on stock market prices.

Housing Market Index:

Monthly survey done by the members of the National Association of Home Builders that measures demand and conditions in the single-family housing market.

Consumer Sentiment Index:

Released monthly, it is a survey done to at least 500 respondents that answer over 50 questions concerning near-term consumption and spending attitude.

Effect of wars on the markets:

Even though the markets do not like uncertainty, historically the markets have seen higher than usual returns (with lower volatility) during times of war. Different industries behave in different ways during these times and an analysis of your holdings is necessary to evaluate if you would like to re-balance your portfolio in a different way.

Leading Economic Indicators:

The index of leading economic indicators aka the LEI index is an index that is made up of ten economic indicators and updated around every 20th of the month by the Conference Board.

This index reflects the change in those economic indicators that lead the economy.

The data from the ten indicators is expressed in index form so that it can be easier to interpret.

Composition of LEI index:

1. Unemployment claims
2. Stock Prices
3. Orders for consumer goods
4. Plant and equipment orders
5. Length of workweek
6. Speed of deliveries
7. Money Supply
8. Building Permits
9. Yield Spread
10. Consumer expectations

These reports come out separately before the LEI numbers are published, which allows market observers like yourself to make assessments as to how the economy is behaving.

Rule of thumb:
Market observers interpret three consecutive declines in the index as an early warning sign of recession. Conversely, three consecutive increases in the middle of a recession can be an early sign of a recovery.

Info available @ https://www.conference-board.org/data/

Coincident Economic Indicators:

The index of coincident economic indicators aka the CEI index is an index that is made up of four economic indicators and updated around every 20th of the month by the Conference Board.

This index reflects the change in those economic indicators that show the current state of the economy.

The data from the four indicators is expressed in index form so that it can be easier to interpret.

Composition of LEI index:

1. Nonfarm payroll employment
2. Unemployment rate
3. Average hours worked in manufacturing
4. wages and salary

These reports come out separately before the CEI numbers are published, which allows market observers like yourself to make assessments as to how the economy is behaving.

Info available @ https://www.conference-board.org/data/

GamePlan:

"A goal without a plan is just a wish"

You need to write down on paper every part of your trading plan before you start trading. Your trading plan should include:

- Description of strategy
- Hold time
- Entry signals
- Exit signals
- Position sizing
- Max loss
- Stock selection
- Bail-out indications

There are 2 main reasons why you need a trading plan. For one, you need to stay consistent in what you are doing. In doing so you are to exploit the edge you have created. The second and more important reason is that once you enter a trade your emotions take over and your brain rationaliz reasons for you to do things that aren't part of your plan. You will be better able to not deviate from your plan if it's written down, if it's in front of you while you trade and if you read it often.

Trading plan template

Gamplan	
Strategy	name of strategy
Style	day-trading, swing trading, investing
Type	momentum, mean-reversion, event driven
Holding period	min to max holding time
Stock selection	fundamental & technical criterias for eligibility
Entry signal	set of criterias to triger entry
Entry style	Aggressive, Passive scaling methodology (1 entry, scaling in, scaling out)
Take profit signal	when to take profits
take profit style	market order, limit order, combination
Position sizing	max position
Stop Loss	price point for exit
Take Loss style	Aggressive, Passive
Bail-out indicators	things that can happen that cause you to just get out

Strategy 1: Short Squeeze

This strategy revolves around the fact that short traders have to cover their position at one point or another. Shorting is not a long term investment style and there are many fees asociated with being short a stock. Therefore, knowing that a stock has a high short ratio gives us an indication that there could be demand for the stock in the short term. Knowing that a stock has a high short ratio and short float is not enough for a buy signal. It's not because short float is high that the stock won't keep dropping, and that long side investors won't keep selling pushing the stock's price further down. What you want to do is combine the short ratio and short float with price action. If the price goes up and we know that alot of people are short then we know they will have to close their position, which they will do by buying back the shares. By doing this they will put more buying pressure on the stock, which will lead to higher prices, which will in turn trigger more stop losses and more covering, and so on. This is what we call a short squeeze.

Trading Plan	
Strategy	Short Squeeze
Style	day / swing
Type	momentum
Holding period	intraday - 2 weeks
Stock selection	Short Float > 7% Short Ratio > 5
Entry signal	Sharp move up (>7%) or Hit 52-week high
Entry style	Agressive 1 entries 2 exits (leave one open with trailing stop)
Take profit signal	Volume does 40% of Short float since up-spike or >8% (for swing)
take profit style	Passive
Position sizing	2%-5% of account max loss
Stop loss	set bellow closest support
Take Loss style	Aggressive
Bail-out indicators	Strong bad news

Strategy 2: Pair Trading

Pair trading strategy was developed in the 1980's by Morgan Stanley and since then, it's one of the most popular hedge fund 'strategy until today.

It's a market neutral trading strategy which means that we can profit from any market conditions: uptrend, downtrend, or sideways movement.

Synonyms of pair trading: statistical arbitrage, long/short strategy, convergence trading strategy, Equity-market-neutral.

In pair trading we are looking for 2 stocks that are very correlated (that move together). We track the price movement of these stocks since we know they should be moving in line with one another. A way of tracking their price movement is by comparing the spread (the difference between the price of one stock to the price of the other stock) and if that spread narrows or widens we know that the stocks are converging or diverging. If the pairs (the stocks) diverge from one another, we know that there is a high likelihood that they converge in the near future. This creates a trading opportunity that we can capitalize on. We can buy the stock that is undervalued and short the one that is overvalued. In this situation we have just entered a pair.

We call a pair the combination of the long and short position. This portfolio of 2 positions is our pair. We can then talk about the pair as if we were talking about one product. We can say buy the pair at 5 and sell it at 6. we can say we are long the pair or short the pair.

PAIR = Stock1 - Stock2

Long the Pair -> Long stock 1 and short stock 2
Short the Pair -> Short stock 1 and long stock 2

Because we are long and short we are in a market neutral strategy. This means that no matter what the market is doing we don't care as it shouldn't affect our returns.

How we expect the pair/stocks to behave under different scenarios:

When Long Pair

Market crash: Stock1 ->
Stock2 ->
Total ->

Market rally: Stock1 ->
Stock2 ->
Total ->

Market is sideways: Stock1 ->
Stock2 ->
Total ->

When Short Pair

Market crash: Stock1 ->
Stock2 ->
Total ->

Market rally: Stock1 ->
Stock2 ->
Total ->

Market is sideways: Stock1 ->
Stock2 ->
Total ->

Stocks are not always the same price. Therefore we need to add another indicator: the ratio.

Ratio (hedge ratio) is the price of stock1 divided by the price of stock2. This number allows us to know how many more times stock 1 is more expensive than stock 2. We then use this number by multiplying it with stock two. This allows us to have the appropriate "dollar value" hedge position.

Pair = Stock1 - Stock2 * Ratio

Hedge: A hedge is an investment used to limit the potential loss of your primary position.

What makes a good pair:

-Price behaviour.
-Fundamental reasons for that behaviour.

We can Track price behaviour in two ways:
-Looking at the charts.
-Looking at correlations.

Why is correlation not allways a good indication of a pair being mean reverting?

Because correlation only looks at the distance between the return of both time series. It does not do any dependencie tests on the divergence of the series. Because of this we want to use co-integration.

Cointegration: When stationarity is found by combining several non-stationary price series together, these price series are called cointegrated.

Stationarity: Price series that are "mean reverting" are called stationary.

If we assume that y_t and x_t are non-stationary and cointegrated, then we can find a stationary linear combination. In other words: we are saying that the spread should be mean reverting. (assuming constant hedge ratio)

$$y_t - \beta x_t = u_t$$

Where,
y_t: Price series of stock Y
x_t: Price series of stock X
u_t : spread (price of the pair)
β : Hedge ratio

The process of finding and traiding pairs

The most common techniques for pair trading are:

Enter a position when the spread between 2 cointegrated stocks deviates from his average (2 z-scores): we buy (long) the underperforming one and simultaneously short (short-sell) the outperforming one.

Exit the position when the spread reverts to his mean (0 z-score).

Using Bollinger bands with a lookback of 20 days trading period.

Steps to trade pairs:

1- Find 2 stocks that have a good fundamental reason to be cointegrated.

2- Tests for statistical significance:
- ADF test, Hurst exponent, Variance and Johansen.
- Or simply watch the chart! (tradingview)

3- Backtesting
- Sharpe ratio (www.pairtradinglab.com)

Traiding plan	
Strategy	Pair Trading
Style	
Type	
Holding period	
Stock selection	
Entry signal	
Entry style	
Take profit signal	
take profit style	
Position sizing	
Stop loss	
Take Loss style	
Bail-out indicators	