MODULE

Bubbles, Busts & Business Cycles

The stock market helps us determine what investors believe a company's particular value at that specific moment in time; however, what happens when investors behave irrationally?

Since financial markets were first conceived, they have been subject to periods of irrationality. This behavior can cause prices for stocks and other assets to behave bizarrely - rapidly rising and falling in a bubbles and busts. Sometimes stock prices will increase, but the overall economy will seem to suffer.

There lies the difference between market cycles and business cycles, which can cause companies' valuations to change according to the overall economic climate.

POWERED BY

Key Takeaways From This Module

Guiding Questions

- What was the 2008 financial crisis?
- How do fear and greed affect financial markets?
- Why do “bubbles: form and how can we limit (or profit) from them?
- What are the patterns between market declines? Can we predict them?

Enduring Understandings

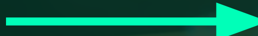
- Why markets are cyclical and bubbles are a function of free markets.
- How to identify opportunities during periods of crisis.
- Which leading indicators can help forecast an economic downturn.
- What should good investors do when valuations seem inflated

Vocab List

- **Business cycle:** Describes the natural, typical fluctuations in economic output, categorized as “expansion” or “contraction”.
- **Market Cycle:** Refers to the typical fluctuations in the stock market. A “bull market” is a period of stock growth, while a “bear market” is a period of declining stock prices.
- **Leading indicator:** An occurrence that predicts a future trend or change.
- **Lagging indicator:** An occurrence that confirms a trend or change.
- **Valuation:** The process of determining a company’s worth based on metrics such as future earnings and the value of its assets, among others.
- **Recession:** A period of substantial economic contraction, or decline in economic output, lasting more than a few months.
- **Depression :** A more extreme version of a recession, characterized by double digit GDP contraction and hyperinflation, and usually lasting for one or more years.
- **Bubble:** Rapid, unsustainable increases in the price of an asset.
- **Hyperinflation:** a rapid increase in price levels of over 50% in a one month period.

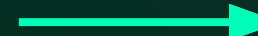
Market Cycles

Accumulation
This is the first stage of the market cycle. It occurs when the market is at a low point, and investors are just starting to get back into their positions.



Markup
This is the second stage - it is a stage of stability in the market. Towards the end of the markup stage, prices move higher.

Distribution
In the third stage of the market cycle, prices reach higher and higher levels as more investors buy into a stock, with prices eventually coming to a peak.



Downtrend
In the fourth and final stage, the stock price declines after peaking, unable to sustain its previous high.

Business Cycles

Expansion

Expansion is the period of economic growth during a business cycle. Expansions are characterized by steady gains in GDP growth, decreasing unemployment, increases in stock prices, and general economic prosperity. During expansions, stock markets enter a **bull market**, in which stock prices are rising and most investors are buying rather than selling stocks.

Peak

A **peak** is when expansion turns to contraction. Right before a peak, “overheating” can occur, characterized by greater than normal GDP growth, inflation above targeted levels, and prolonged record-high stock prices. This usually leads to irrational **price bubbles**, which upon bursting send shockwaves of economic contraction across markets.

Business Cycles Cont...

Contraction

Following a peak, investors sell off lots of assets, and the economy transitions to **contraction**, a period defined by declining economic output. Contraction coincides with increased unemployment and a decrease in consumer spending, manufacturing, residential construction, wages, and currency strength. Stocks enter a **bear market**, in which stock prices decline and more investors are selling assets than purchasing them.

Trough

Following periods of contraction, markets will eventually reach a **trough**, or the point at which contraction turns to expansion. The phase following a trough is referred to as a **recovery**. Recoveries are broadly defined as periods in which negative GDP growth slows or stops, and economic expansion resumes as markets move back towards economic equilibrium.

Connecting the Cycles

Market cycles are usually leading indicators of business cycles.

For example, a downturn in stock prices generally comes before a period of economic contraction.

Leading Indicators	Lagging Indicators
Money Supply	Interest Rate Cuts
Rising Inflation	Unemployment
Stock Prices	Consumer Confidence
New Home Construction	GDP Growth
Inverted Yield Curve	Default Rates
Commodities	Manufacturing

Leading Indicators

Case Study: Bond Yields

When people buy bonds, they do so with the knowledge that they will receive a "yield". When yields rise, it means investors are demanding more money to buy and hold bonds. When long term bond yields rise faster than short term bond yields, this usually means investors feel positively about strong future growth. The opposite is true when short term bond yields grow faster than long term bond yields.

Case Study: Commodities

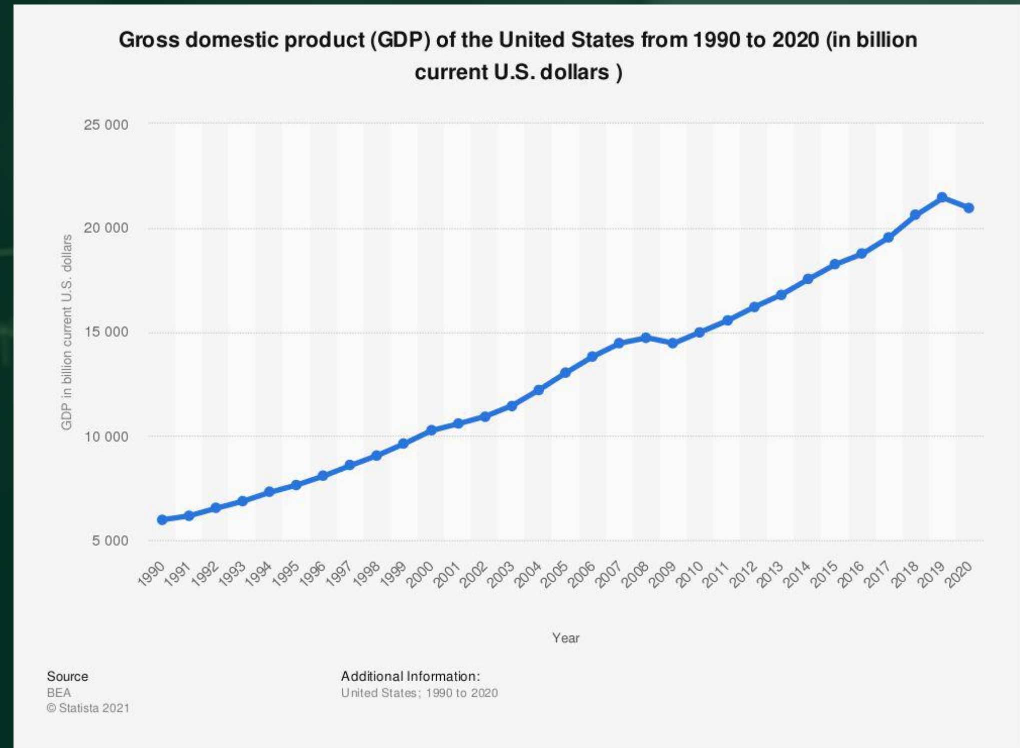
Prices for commodities such as agriculture, oil and precious metals are sometimes a leading indicator for inflation. Commodity prices are highly sensitive to economy-wide shocks such as increases in demand. Additionally, any supply chain disruptions will factor into commodity prices first, before it factors into the rest of the market. For example, if a batch of corn crop is eaten by animals, the price of corn will immediately increase.

Lagging Indicators

Case Study: GDP

GDP stands for Gross Domestic Product, and is a measurement of the economy's health. When the economy is strong, GDP usually increases.

In this graph, you can see a significant decrease in GDP in 2008, during the financial crisis, and again in 2020 at the onset of Covid-19.



How Do We Know The Value of A Company?

When deciding where to invest your money, it is important to understand the *inherent* value of companies you're interested in. Many times, share prices are not a good indicator of what a company is actually worth. From soft drinks to biotech, every business should be evaluated based on its assets, revenues and quality of management. Luckily, there are a few specific ways to do this, so you won't get lost in the numbers.

Application Activity

Think about a few companies you are interested in, or that you buy a lot of products from. Look up their share prices. Do any of them trade for similar prices? Do any of them trade higher or lower than you expected?

Book Value

Formula:

- Total Assets - (intangible assets + liabilities)

Breaking It Down:

- **Total Assets:** This value is found on a company's balance sheet. It includes cash, equipment, buildings, patents, inventory; anything a company has that is worth money.
- **Intangible Assets:** Assets that are not physical; trademarks, patents, copyrights, brand recognition, etc.
- **Liabilities:** Anything a company owes; loans, expenses, wages, taxes, etc.

Why It's Important:

- The formula returns the value of a company's physical assets.
- If a company goes bankrupt, investors could expect to receive the book value/total shares
- Compare the Book Value to the Market Value and share price to see how they differ.

Relative Value With Comps

Process:

- Identify similar corporations in an industry
- Collect important figures
- Calculate price multiples
- Compare multiples across competitors

Breaking It Down:

- **Important Figures:** These are found in companies' financial statements and include revenue, market cap, share price, etc
- **Multiples :** These are ratios or values produced by plugging fundamental figures into formulas. Common multiples include P/E ratio, Enterprise Value(EV), EBIT(Earnings before Interest and Taxes), and more

Why It's Important:

- Comparing key company metrics across an industry will show whether your investment is overvalued or undervalued

Discounted Cash Flow Model

Process and Formula:

- Estimate Future cash flows
- Choose discount rate
- Discount future cash flows to the present day

$$DCF = \frac{CF_1}{1+r}^{1} + \frac{CF_2}{1+r}^{2} + \frac{CF_n}{1+r}^{n}$$

Breaking It Down:

- **Future Cash Flow:** This is the projected amount of money a company will generate in future years. Future Cash Flow projections are estimates based on past performance.
- **Discount Rate(r):** The rate used to discount cash flows to the present day. Investors usually choose a discount rate that is equal to the % return they expect to receive on their investment. E.g. if you know you could get a 5% return from a different investment, you could use a 5% discount rate.

Why It's Important:

- The formula returns the estimated value of future cash flows in the present day. If the DCF is greater than the actual current cash flow, then the investment could yield positive returns.

Limitations of Valuations

On the Whole, Valuations Are...

Estimates: DCF analysis requires *lots* of estimation, from the discount rate to the projected future cash flows. While they may be accurate in normal circumstances, they are not guaranteed to be correct.

Time Based: For any of the valuation strategies, numbers change from day to day. They need to be frequently updated to reflect the fluctuations of the market.

Complex: Especially for Relative Value and DCF analyses, the required calculations are robust. If one number is missed or incorrectly factored in, the end result could be very misleading.

Broad: The Book Value, while a helpful metric, only provides insight for one number on the balance sheet. All companies should be analyzed holistically, taking into account both qualitative and quantitative information.

70's Stagflation

What it was:

- Occurred in the 1970's
- Marked by high unemployment and inflation(rising costs)
- Oil prices reached a 30 year high

Why it Happened:

- High oil prices pushed the price of gasoline higher,sending shockwaves through the market
- The Federal Reserve acted late in rising interest rates, so demand stayed high, further pushing prices.

1987 Black Monday

What it was:

- It occurred October 19th, 1987
- The markets crash ed20% in one day
- Caused exchanges to build in trading curbs and “circuit breakers” to avoid future panic selling

Why it Happened:

- In the prior 5 years, valuations of the market had skyrocketed
- The Fed rose interest rates in the first two quarters of 1987
- Many investors were using stop orders, so more and more sell orders occurred as stocks hit lows, causing a domino effect

Dot Com Tech Bubble

What it was:

- Occurred in the 1990's and early 2000's
- Tech stocks grew rapidly as internet-based startups became wildly popular, forming a bubble
- The bubble burst in 2001, causing bouts of panic selling

Why it Happened:

- Internet companies were a "fad" in the 1990's as technology advanced quickly
- Venture capitalists invested freely in such companies, allowing them to survive without even turning a profit
- Once funding dried up, the companies went bankrupt and the sector crashed.

The 2008 Financial Crisis

What it was:

- Occurred in 2007-08, and triggered the Great Recession
- A housing bubble caused by low interest rates combined with banks and lenders who continuously offered mortgages to subprime lenders

Why it Happened:

- Banks and other lending institutions invested in mortgages for people with poor or no credit history - also called subprime mortgages
- Lenders sold those loans as packages to wall street banks
- As interest rates rose and housing prices decreased, many lenders declared bankruptcy, causing major Wall Street banks such as Lehman Brothers to collapse

The Covid Crash of 2020

What it was:

- Began on Feb 20th, ended on April 7th 2020
- Widespread investor panic about the Covid-19 pandemic caused some of the most significant point drops in history

Why it Happened:

- The economic shutdown caused many to lose their jobs and forced businesses to close
- Uncertainty about the progression of the virus and the future of economic activity cause investors to pull out of the market

How Can An Investor Spot The Next Bubble?

There are 3 clear signs that indicate a bubble...

1. **A new story or trend is circling the market and news cycles**
   a. "Will Bitcoin be the Future?"
   b. "Tesla becomes best-selling car"
2. **Prices of stocks in the trending industry rise regardless of bad press, financials, or the media in general**
   a. Companies that were part of the dot com bubble never turned a profit, but people bought the stocks regardless
3. **Valuations are extremely high, especially compared to historical valuations**
   a. AMC, the movie theater, has reached a high valuation as a "meme stock", even though its business fundamentals don't match up.

Time In The Market > Timing The Market

Trying to Time the Stock Market Is a Bad Idea -- Here's Why

Evidence shows that long-term investing is better than short-term stock picking.

Stock market volatility can be an opportunity for investors. Here's why

Trying to Time the Stock Market Is a Bad Idea -- Here's Why

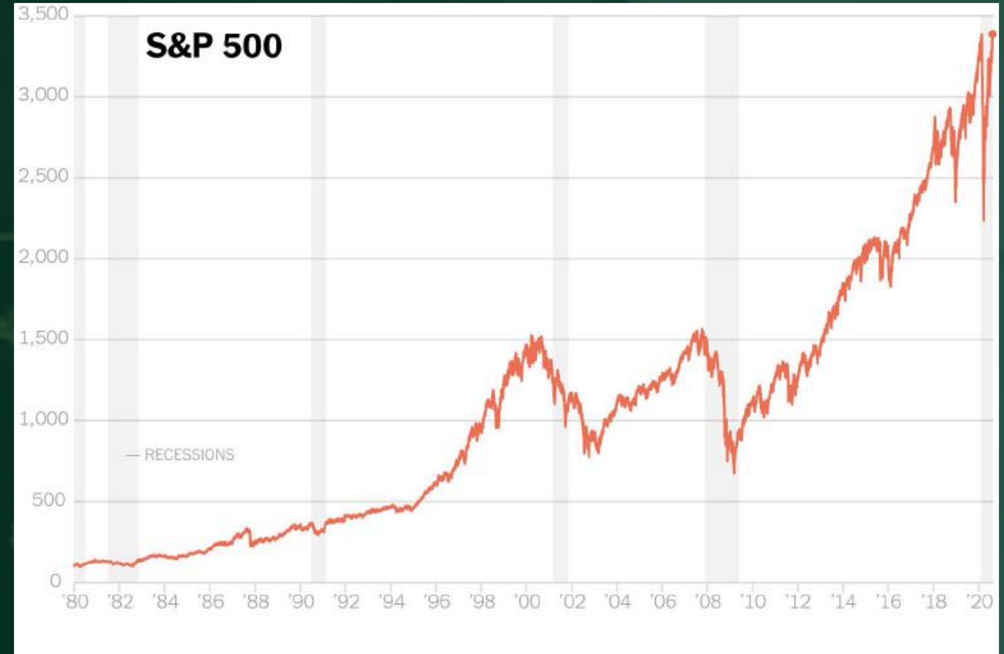
Evidence shows that long-term investing is better than short-term stock picking.

Financial news sites like Fidelity and CNBC and experienced investors say staying in the market through volatility is better than trying to time big drops or upswings. Do you believe them?

If you won't take their word for it...

The market produces higher and higher returns over time. Regardless of recessions and big drops, like that seen in 2008, the market recovers and eventually surpasses previous returns.

It is better to stick with your investments through price drops, as knowing exactly when they will happen is near impossible and you could end up losing money.



The s&p 500 index contains 500 stocks from different sectors. It measures the performance of the market as a whole.

Key Takeaways From This Module

CORE & FUNDAMENTALS

- There are a few different ways to find the true value of a company
- Business cycles and market cycles are different entities, but one is usually an indicator for the other
- During different points in business and market cycles, recessions and bubbles can occur.

APPLIED KNOWLEDGE

- Each valuation strategy is fit for specific scenarios.
- Most of the necessary financial information needed for valuation is in a company's financial statements
- While large stock price drops or swings may occur, the market delivers high returns over time

RELEVANCE FOR YOU

- You can take advantage of the market's natural growth by staying invested, and not trying to buy or sell based on when swings *might* occur
- Pay close attention to the news to track investing "fads".
- History shows us the danger of speculation and investor frenzy. Do close research into new trends before deciding whether or not to claim a stake.