Deciphering Decisions

Behavioral Finance

Why the need for Behavioral Finance ?

The sole reason why one can make money in the stock market is because someone else loses it. Look at equity or derivatives. Every stock that you buy is sold by someone and vice versa.

What this means is that even with well-defined technical analysis; opposing views exist in the market and the reason behind this is that people react differently to different changes in the market.

The efficient market theory, which is the basis of technical analysis, states that all equities are priced fairly based on all available public information, meaning the price of a stock incorporates into it all the available information about it.

But the domain of behavioral finance argues that this theory fails to consider irrational emotional behavior.

Quick example - imagine I am a very successful trader who trades with more than 95% accuracy or in other words, I make money on 95 of every 100 trades I execute. I tell you to buy stock X at a price of 100 saying this will go up to 200 in the coming month or so. You take up my advice but within a week the stock dips to 50. I am still confident about my trade but you, being quite inexperienced, are quite scared by this downtrend. You are not willing to risk your hard-earned money at a potential profit of 100 per share.

This is quite reasonable. Even if the stock does rally in the coming weeks to 200, you would still probably choose to avoid the loss you are looking at instead of holding out for a potential reward.

This is what is called **loss aversion bias** where traders place a greater weighting on the concern for losses than the pleasure from market gains. You

see how different reactions to the same market change can affect how you fare in this game of the market.

We will cover many such biases and other psychological phenomena ahead.

Do keep in mind that behavioral phenomena are very difficult to quantify. Many-a-times you'll have a strong gut feeling mostly due to experience that would want you to react in a particular manner but it would be impossible to put that in code. But still, you should have all these points in the back of your mind so that you can make a more informed decision and more importantly be at peace with it.

So let's get started.

Key Concepts of Biases

Biases can occur for a variety of reasons. Biases can usually be classified into one of five key concepts.

- **Mental Accounting:** Mental accounting refers to the propensity for people to allocate money for specific purposes. In other words, people treat different money differently even though there is no logical reason behind it. Take this for example - If you are trading with your hard-earned money, you would be willing to take a certain level of risk based on your comfortability. Imagine I give you 10,000 and I ask you to trade with it without any burden of returning it. You could lose all the money for all I care. Of course, to you this is extra "Free" money of sorts. You would not be hesitant to take much higher risks with this money which you normally never would. More realistically consider you start with 1000 and on your very first trade make 500 profit. You would take higher risks with this "extra" 500 or maybe some part of it than you would with the initial 1000.

- **Herd Behavior:** Herd behavior states that people tend to mimic the financial behaviors of the majority of the herd. Herding is notorious in the stock market as the cause behind dramatic rallies and sell-offs. This point is pretty straightforward. Imagine you take a trade based on all points of your checklist ticked off. But if people around you, especially those who you know are very experienced and efficient traders start selling the stock, you would feel much less confident about the trade

now and would consider selling it yourself to avoid loss due to something you might have missed.

- **Emotional Gap:** The emotional gap refers to decision-making based on extreme emotions or emotional strains such as anxiety, anger, fear, or excitement. Oftentimes, emotions are a key reason why people do not make rational choices. Imagine you have lost money on 5 or to make the point clear 10 trades in a row. You are feeling very low and are in desperate need of a win even if it is a small one. In this situation, you would take minimal risk and make sure you make at least some money in the next trade. On the other hand, imagine you have made hefty profits on the last 10 trades. Every trade signal you identify turns to gold. You might get cocky here and may be willing to take higher than usual risk given your recent track record. One dangerous example relating to this is "revenge trading". Go back to the first example where you lost money on 10 consecutive trades. You are frustrated. You want to make up for those losses as quickly as possible and while doing so take trades with high potential profits without considering the risk involved at all. If your luck goes against you, which it will more often than not, you will end up making more and more losses thus compounding both your losses and frustration.

- **Anchoring:** Anchoring refers to attaching a spending level to a certain reference. Examples may include spending consistently based on a budget level or rationalizing spending based on different satisfaction utilities. Anchoring means attaching special importance to a specific figure when in fact conditions change continuously. If you value a stock at 300 at a given point in time based on all factors at your disposal, you set this price of 300 as the one true value of this stock and refuse to sell below it on the assumption that the price will rally back to its "true" value. But it may so have happened that at a later time the conditions have changed and had you yourself evaluated this stock now, you would value it at 250.

- **Self-Attribution:** Self-attribution refers to a tendency to make choices based on overconfidence in one's own knowledge or skill. Self-attribution usually stems from an intrinsic knack in a particular area. Within this category, individuals tend to rank their knowledge higher than others, even when it objectively falls short.

Specific Biases

1. **Confirmation Bias:** This bias states that one is often looking for and willing to accept information that confirms the already existing belief one has even if the information provided is false. A quick example- imagine you are a fundamental investor and you believe company ABC is undervalued and its stock price is going to increase. While researching further about this you might look more at articles, reports, and figures that support your hunch and undermine the significance of negative reports thus eventually leading to incorrect decisions.

2. **Experience Bias or Recency Bias:** Many of your decisions are influenced by the outcome of similar decisions you took in the recent past. A classic example is the time following the 2008-09 recession. Many were dismal about the market conditions and unwilling to take any risk in the fear of a similar event occurring again when in fact the market did rally and bounce back after the recession.

3. **Loss Aversion:** (discussed earlier)

4. **Familiarity Bias:** Many investors prefer to invest in companies they are familiar with. For example, among two companies, even if one has decently better numbers than the other, an investor might choose to invest in the other if it is a well-known company or it has been around for a long time. This can lead to investors not diversifying to reduce risk when in fact they should.

Mainstream market theory assumes that everyone involved in the markets makes rational decisions all the time but as we have discussed through the biases above that is not always the case and thus behavioral finance is a domain you should have knowledge about so that you don't fall prey to it yourself.

Indicators to Understand Market Sentiment

Let's move on to some indicators that help you understand the overall sentiment of the market:

On Balance Volume (OBV)

1. If today's closing price is higher than yesterday's closing price, then:

$$\text{Current OBV} = \text{Previous OBV} + \text{today's volume}$$

2. If today's closing price is lower than yesterday's closing price, then:

$$\text{Current OBV} = \text{Previous OBV} - \text{today's volume}$$

3. If today's closing price equals yesterday's closing price, then:

$$\text{Current OBV} = \text{Previous OBV}$$

OBV helps you to differentiate between smart money or institutional investors and retail investors. Institutional investors are assumed to make very efficient trading decisions and influence the market hugely. Say a stock is trading within a range for some time but its OBV has been steadily increasing. This could mean that smart money is consolidating its position while being careful not to drive the prices up. Retail investors are going to notice this in some time and then buy themselves thus driving up the price with a sharp rise in OBV. After this rally, the institutional investors will book their profits thus leading to a dip in OBV. OBV is thus a leading indicator. Its absolute value is not very important but attention is to be paid to how it changes.

Accumulation/Distribution Indicator (A/D)

The accumulation/distribution indicator (A/D) is a cumulative indicator that uses volume and price to assess whether a stock is being accumulated or distributed. Therefore, when a stock closes near the high of the period's range and has high volume, it will result in a large A/D jump. Alternatively, if the price finishes near the high of the range but volume is low, or if the volume is high but the price finishes more toward the middle of the range, then the A/D will not move up as much.

If a security's price is in a downtrend while the A/D line is in an uptrend, then the indicator shows there may be buying pressure and the security's price may reverse to the upside. Conversely, if a security's price is in an uptrend while the A/D line is in a downtrend, then the indicator shows there

may be selling pressure, or higher distribution. This warns that the price may be due for a decline.

Both these indicators that we have discussed are not stand-alone indicators. They help assess the conditions but can produce false signals as well. They should be used along with other indicators to make convictive trades.

Open Interest

Open interest only rises or falls when a new contract is created or destroyed—one long and one short seller must enter the market to increase the open interest, and one long and one short seller must close their positions for open interest to fall.

A falling open interest shows that losers are exiting positions while winners are taking profits. It also shows there are no additional losers to take the place of those who have given up. Falling open interest is a clear signal that winners are taking their profits and running for the border while losers are giving up hope. A loss of a contract (and a declining open interest) points to the likely end of a trend.

The open interest that remains relatively constant during a market uptrend indicates that the supply of losers has stopped growing as the only potential candidates to enter into a contract are previous buyers who are looking to profit from their position. In this case, the uptrend is likely nearing its end.

Next, we will look at fear and greed and how we can assess those using indicators. Fear and greed can lead to overreactions and experienced traders can make use of this to profit. For example, one can buy shares when others are panicking too much. If one recognizes that the panic is short-term and the market will most probably bounce back, one can make use of the low price of shares due to the current panic and buy cheap and sell high later. Similarly, if one recognizes that the market is over-euphoric and that the current surge in prices will eventually come back down, one can short stocks and make money.

The Cboe's VIX Index, for instance, measures the implicit level of fear or greed in the market by looking at changes in volatility in the SP 500.

Understanding Volatility

Annual Volatility is a measure of the range of prices that stock could trade over a year's time. Because it is derived from the prices of SPX index options with near-term expiration dates, it generates a 30-day forward projection of volatility.

The exact method to calculate volatility is explained thoroughly in Zerodha's module 5 chapter 16. Do go through it.

This volatility can then be used to develop several trading strategies which we will discuss next time.