Proposals for Hedge Fund

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Abstract:

In the hedge fund, I will have two main objectives as part of the Boston College team. Throughout both of these goals, I will base my trading and research on “Grey Swans”, which are highly improbable but subtly foreseeable with large impacts within the financial world. My first and main objective is to assist Tuna Uskudar with research and analysis for trading options, mainly calls, on US equities. To find ideas, we attempt to trade options that have been recently bought at an extremely unlikely volume. Next, we build a small thesis and assumptions that surround this equity, and use a large-scale Python algorithm to find the most undervalued option, and trade based on our findings. In the near future, I hope to build a Monte Carlo simulation that would allow for greater precision in predicting future target prices. Alongside this, I also intend to trade on “Grey Swans” within emerging markets in LATAM, specifically surrounding political and macroeconomic events. I will base my assumptions to trade on both historical data (similar circumstances in other countries) and connections/contacts within these regions.

Introduction:

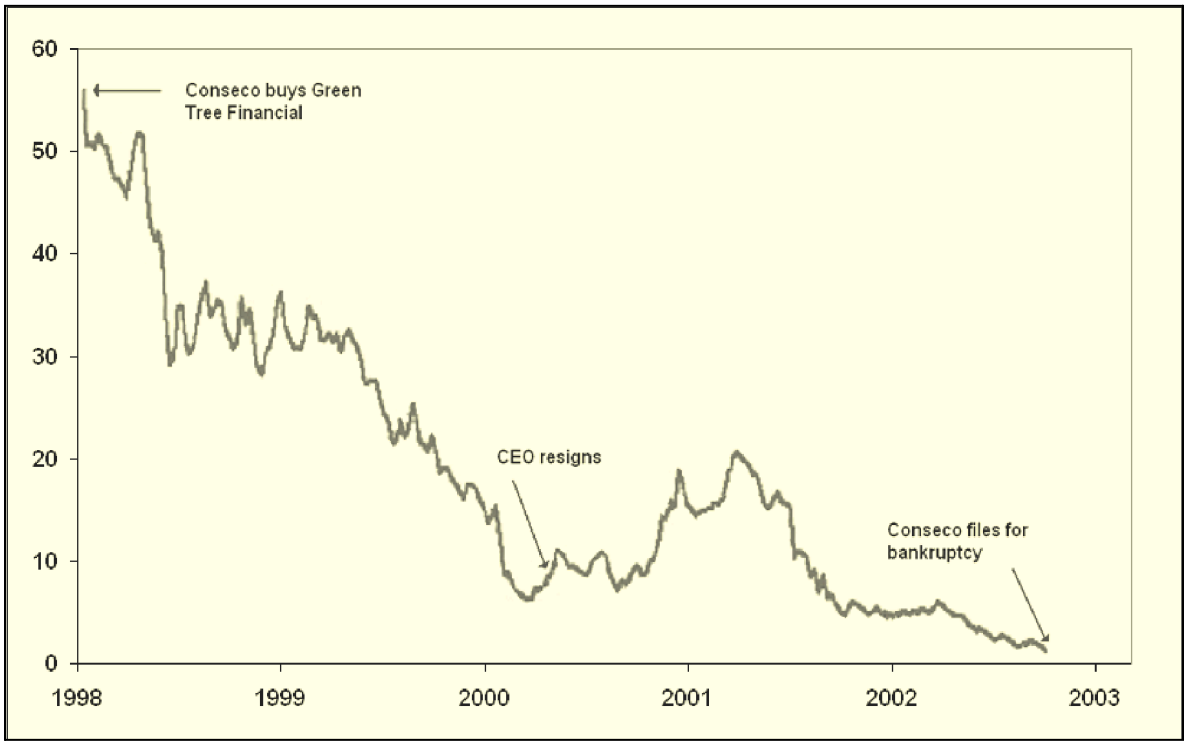
As previously mentioned, I will base both my trading and research on what has been recently coined by financial analysts and researchers as “Grey Swans”. This term originated from Nassim Nicholas Taleb’s book, *The Black Swan: The Impact of the Highly Improbable*, where “Black Swans” are high-impact events that are nearly impossible to predict and also appear obvious in hindsight. Examples of these include the September 11 attacks, the 2008 housing crisis, and other similar events. In contrast, “Grey Swans” are events that are:

1. More probable to occur
2. Subtly foreseeable
3. Has a lower impact on the global economy, but can have greater local effects

Grey Swans happen consistently throughout the world, from outcomes in presidential elections to debt or currency crises in developing countries, and even social trends. For instance, Conesco’s (CNO) purchase of Green Tree Financial, the leading lender for purchases of mobile homes, and offering 30yr loans could have been predicted as an awful decision. After several years of using motor homes, the value of the vehicles typically fell far below that of the remaining loan

payments, and owners chose to default. With this, Conesco reported an annual loss of 2B, which was their largest in history, and filed for Chapter 11 two years later.

The main takeaway from this story is not only that Grey Swans can be predicted through higher-level critical thinking, but also that they allow for immense profitability if one is positioned correctly to benefit from volatility. In this example, shorting CNO would have yielded a profit margin of nearly 100%. As Taleb mentions, these events are simple to notice in hindsight, but there still exists the possibility of finding a market trend before it occurs.

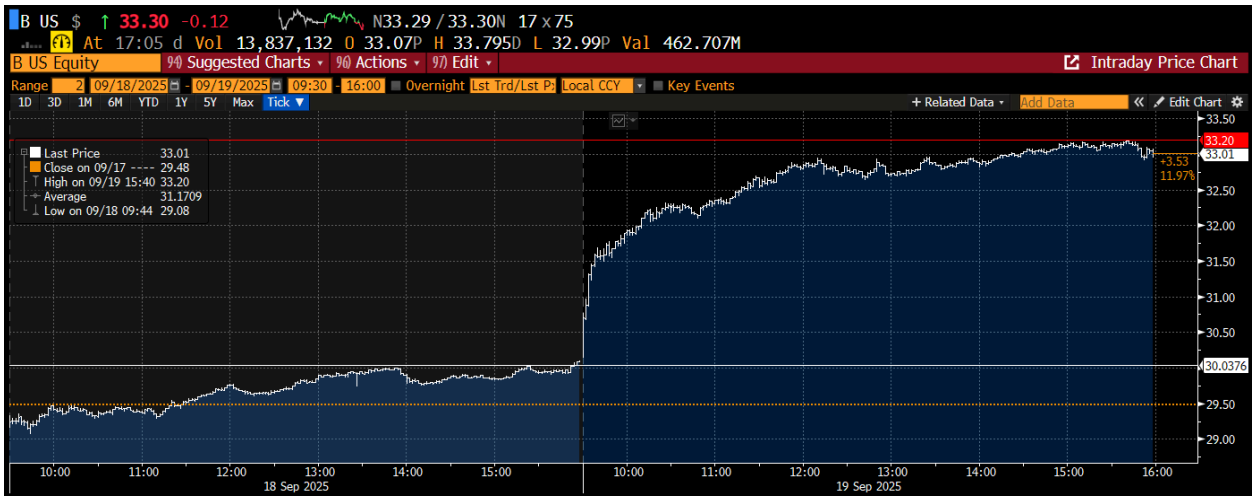


Conesco stock price freefall

Options Trading:

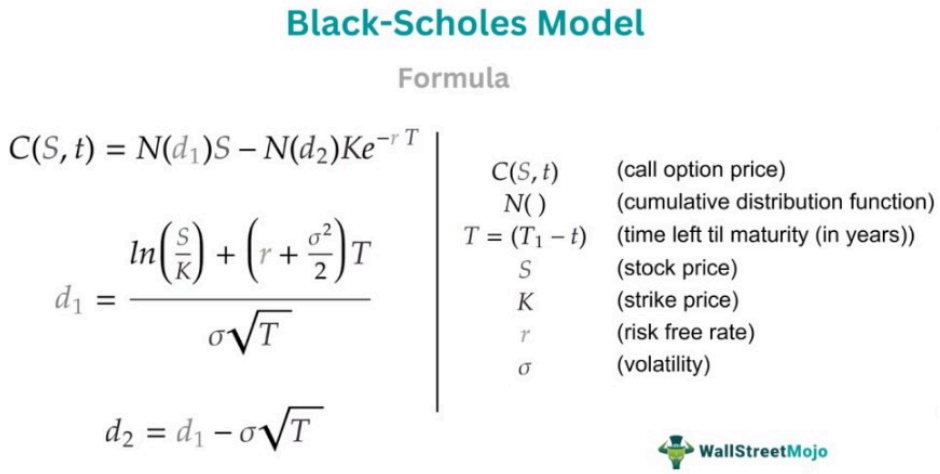
As previously stated, my main objective within the hedge fund will be to assist Tuna Uskudar (and any other teammates within the field) in analysis for trading derivatives, specifically call options. Our strategy to effectively trade calls stems from the same concept of Grey Swan, but rather than spending an impossible amount of hours conducting our own extensive research (limited by the low amount of current members within the Boston College branch), Tuna and I attempt to hitchhike on seemingly impossible trades by large institutional investors. To conduct this strategy, we have divided the work into two main groups: company research based on upcoming events that are likely impactful, and market analysis based on recent volume trading.

Between these two, my focus is on market analysis, where we view historical data on options that have been recently traded at impossibly high volumes. For instance, one trade that we recently worked on was Barrick Mining Corporation (NYSE: B), which is a large-cap corporation within the mining industry located in Canada that specializes in gold and copper. While observing their call options' volatility, it was evident that they had been trading at a very low but constant level before September 18th, 2025, but on this day, an investor had bought approximately 500 call options contracts (at around $1.20 per share, making this investment worth around $60,000) at once, demonstrating highly advanced knowledge or analysis by this investor which exceeded just a random chance. Therefore, we decided to buy a few contracts ourselves, and the stock instantly jumped the next day by 10% (from $30 to $33) after Canada's federal reserve surprisingly cut rates by 25bps. However, as option prices are much more volatile than the underlying asset, our call option with a strike of $35 and a < 6mo. maturity was valued at over twice that of the previous day. This is just one example of the several trades that Tuna and I have conducted to find Grey Swans hidden within the market, and we are sure that we have many more to come.



Barrack stock on September 18 and 19

The second part of my market analysis comes with a large-scale Python model that I have developed, which takes into account existing market information combined with a few macroeconomic assumptions to output an implied option price for the underlying asset. This model is computed based on the formula of the well-renowned Black-Scholes model, with a few changes due to my assumptions and for advanced readability, and it computes it with a higher level of accuracy than that of current Generative AI (as compared to OpenAI's ChatGPT5). Below is a small fragment of my code, along with the Black-Scholes model.




```
def main():  1 usage
    lhs_main = spot * norm.cdf(dsub1())
    rhs_main = strike * math.exp(-r/100 * t/365) * norm.cdf(dsub2())
    call_price = lhs_main - rhs_main
    return call_price

def dsub1():  2 usages
    numerator_lhs = math.log(spot / strike)
    numerator_rhs = (t/365) * (r/100 + ((volatility/100)**2)/2)
    denominator = (volatility/100) * math.sqrt(t/365)
    d1_value = (numerator_lhs + numerator_rhs) / denominator
    return d1_value

def dsub2():  1 usage
    d2_value = dsub1() - (volatility/100) * math.sqrt(t/365)
    return d2_value
```

As previously mentioned, my long-term plan is to elaborate on this model into a better predictor of prices using Monte Carlo simulations, which take thousands of random samples to estimate the probability of many different financial outcomes. With these, I believe that the hedge fund will have the ability to choose between thousands of different stocks based on which one has the best expected probability of volatility in either direction, allowing us to use hedging strategies similar to those being implemented by some of the largest funds in the world.

Emerging Markets LATAM:

The second strategy I plan to implement within the hedge fund is fixed income trading within LATAM in response to Grey Swans that I expect as a result of future political and economic shifts. The best example of this is in Ecuador, my home country, where political elections are a great indicator of where the market will sway. In our February elections for the presidency,

right-winged capitalist Daniel Noboa was expected by most foreign markets to easily win in a single round (which means that they must win by a margin of at least 10% of votes), but socialist Luisa González stunned the foreign investors, tying the voting and forcing a presidential runoff. At this point, Ecuador's 6.9% 10yr. sovereign bonds instantly crashed and moved 50 (percent of par) within the two months until the second runoff due to extremely negative external investor sentiment. However, any local citizen, such as myself, knew that this was the likely outcome as Ecuador historically has always been divided, with 35-40% of the population voting socialist in every election while the remaining votes are split between 15 other candidates. Therefore, it was to be expected that Noboa to receive almost all of the remaining votes. As predicted, Noboa ended up winning the election by a margin of 55% to 45% of the population, returning bonds to almost normal market values.

Ecuadorian 6.9% 10yr. Sovereign Bonds, where February 7 is the first round of elections, and April 13 is the second round

As demonstrated with the graph above, there exist two separate opportunities to benefit from the market: betting against the market before the first round of elections and liquidating before the second round, and betting for the market before the second round and liquidating afterwards. To accomplish this, the best strategy would have been to buy credit default swaps on Ecuadorian sovereigns before the elections and sell them before the second round, where their price was likely to have doubled in value. At this point (near the second round), it would have been beneficial to buy bonds at a low price and later liquidate them after the elections. If done correctly, it would have allowed for somewhere between 120-150% returns in just a couple of months.

For the future, I expect similar results from the upcoming Chilean elections, which are set to take place between November 16 (first round) to December 14 (runoff). Here, the majority of votes are also split between around 10 right-winged candidates, while communist-leaning Jeannette Jara will likely snatch 30% of the votes in the first round and force a runoff, stunning foreign investors and sending bonds into a downfall. Nevertheless, I expect the same outcome as Ecuador, where any one of the right-winged candidates (likely favorite José Antonio Kast) will win the elections and return the market to its normal levels. With this, I am certain that playing the same cards of buying CDSs at first and later bonds would allow for similar returns to those of Ecuador in just a single month. This is just one example of the many Grey Swans that I expect in the near future within LATAM, and with enough research, they will all yield substantial gains.

Conclusion:

These are just the beginning of the many trades that will occur within this hedge fund, and with profound research and analysis, I am certain that we have the capability of exceeding returns that are achieved by large-scale funds. Through my unique perspective on the financial world, we will achieve to benefit from trades that seem obvious to most investors in hindsight, but were capitalized by almost none prior to the Grey Swan event.