FIN 361 Final project report

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Introduction

In this report we’ll highlight our StockTrak several strategies we covered through the course using financial derivatives and stocks of all our inputs and their results from choosing 9 stocks and an ETF, commodity futures for hedging our portfolio, naked options positions strategies which is A straddle, Strip and Strap, option and its underlying stock strategies which is A covered call and protective put to lastly liquidate (close) all positions.

We started trading in Oct3 and we closed our positions Dec17, the return of the overall portfolio is 12.66%.

weights Distribution

Weight distribution is an essential part of this project so we must plan how much we would spend on each task from the beginning.

Since we started with budget of a 1,000,000$ we must determine a percentage for each position we enter so we don’t run out of cash, All the proper calculations were made based on the given calculation for each part on LMS.

The following pie chart and table will give a clearer image of how we distributed our budget:

Stocks

In the beginning we bought 9 different stocks, in this section we will point each one of them and the reason why we choose it, how much it cost and did we gain a profit or loss.

We consumed a 30% of the total budget on these 9 stocks as required.

1. Apple (AAPL):

Basically, every time Apple drop a new device its stock jumps a decent percent so based on this, we bought the stock after Iphone13 drops.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| AAPL | 193 | $143.29 | $170.27 | $5,207.14 | 18.83% |

1. Tesla (TSLA):

The world is shifting to electric vehicles and Tesla growth was up 160% in the first half of last year.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| TSLA | 35 | $793.61 | $942.65 | $5,216.40 | 18.78% |
| TSLA | 7 | $805.72 | $942.65 | $958.51 | 16.99% |
| TSLA | 50 | $807.81 | $942.65 | $6,742.00 | 16.69% |

Stocks continued

1. Amazon (AMZN):

Amazon market cap is 1.74 trillion Dollars also Amazon's stock price gained more than 7% on better-than-expected sales and cloud revenue.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| AMZN | 8 | $3,302.43 | $3,389.50 | $696.56 | 2.64% |

1. Nvidia (NVDA):

There is huge demand in NVIDIA GPU due cryptocurrency mining trends, and they have high Market Cap in electronics’ industry.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| NVDA | 132 | $210.75 | $282.06 | $9,412.92 | 33.84% |

1. Walt Disney Co (DIS):

After being closed at various times during the past 19 months, all of Walt Disney's theme parks are now open. So, we expected an increase in its share price and sadly that was wrong.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| DIS | 156 | $177.71 | $149.01 | -$4,477.20 | -16.15% |

Stocks continued

1. Zoom (ZM):

Zoom has become a part of daily life for millions around the world due to Coved-19, Zoom makes money by selling its platform subscriptions to everyone from single users to companies with hundreds of thousands of employees.

We were shocked from its return.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| ZM | 108 | $256.27 | $195.32 | -$6,582.60 | -23.78% |

1. Pfizer (PFE):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| PFE | 650 | $42.74 | $59.67 | $11,004.50 | 39.61% |

Pfizer stock increase every time the company announce a new dose, and now we reached the fourth dose since Covid starts.

Stocks continued

1. Activision Blizzard, Inc. (ATVI):

Activision is my favorite games creator company and its leading worldwide developer and publisher in the Esports industry. We were expecting a new game from Blizzard in the past November as they announced but it got delayed to 2022 and this is the reason for its poor return.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| ATVI | 258 | $77.36 | $61.56 | -$4,076.40 | -20.42% |

1. McDonald's Corp (MCD):

McDonald's unparalleled brand awareness, and what that does for profitability, surely figured in the company's announcement last month of a 7% increase in its dividend.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| MCD | 80 | $248.32 | $262.45 | $1,130.40 | 5.69% |

ETF

First, what is an ETF?

ETF is an exchange traded fund (ETF) is a type of security that tracks an [index](https://www.investopedia.com/terms/m/marketindex.asp), sector, commodity, or other asset, but which can be purchased or sold on a stock exchange the same way a regular stock can. An ETF can be structured to track anything from the price of an individual commodity to a large and diverse collection of securities. ETFs can even be structured to track specific investment strategies,

We choose Health Care Select Sector SPDR Fund because XLV is an outstanding option for investors seeking exposure to the Health Care ETFs segment of the market as its return in our portfolio shows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Quantity | Buying Price | Selling Price | Profit | Return |
| XLV | 392 | $127.58 | $198.63 | $27,851.60 | 55.69% |

Hedging

Hedging is buying or selling futures contract as protection against the risk of loss due to changing prices in the cash market.

We decided to hedge our portfolio by entering a long position in oats future contracts, and here is our beta calculation:

|  |  |  |  |
| --- | --- | --- | --- |
| Total Market Value Long | $366,245.02 | Stocks Beta |  |
| MCD | 5.34% | 0.594 | 0.032 |
| TSLA | 27.53% | 1.679 | 0.462 |
| ZM | 8.09% | 0.809 | 0.065 |
| NVDA | 9.20% | 1.616 | 0.149 |
| ATVI | 5.49% | 0.878 | 0.048 |
| AMZN | 7.31% | 1.057 | 0.077 |
| XLV | 14.28% | 0.684 | 0.098 |
| PFE | 7.72% | 0.383 | 0.030 |
| DIS | 7.17% | 1.028 | 0.074 |
| AAPL | 7.86% | 1.369 | 0.108 |
| Total | 100.00% | Beta portfolio | 1.142 |
|  |  |  |  |
| Last | 4666 | 50 | 233300 |
|  | Contracts | 1.8 |  |

naked options positions STRATEGIES

The three strategies that we did are A Straddle, Strip and Strap.

1. Straddle with Goldman Sachs Group Inc (GS)

53 Call Option / 53 Put Option

Because we are expected a high volatility in the Goldman Sachs Group stock.

1. Strip with BlackRock, Inc. (BLK)

18 Call Option / 36 Put option

Because we expect a high volatility in the BlackRock stock, but we think that the probability the price will decrease is higher than the probability the price will increase.

1. Strap with CVS Health Corp (CVS)

24 Call Option / 12 Put Option

Because we expect a high volatility in the CVS stock, but we think that the probability the price will increase is higher than the probability the price will decrease.

option and its underlying stock

The two strategies that we did are:

A covered call and a protective put.

1. Covered call with PayPal Holdings Inc (PYPL)

By Own 27 Stock / Short Call 27 contract

The option that we wrote is "covered," because we own enough shares to cover the transaction as required by the option.

1. Protective put with Target Corporation (TGT)

By Own 150 Stock / long put 150 contracts

 The main purpose of protective put is if the stock price declines below the purchase price. By purchasing a put option, any losses on the stock are limited.

‘’There are no results in the naked options positions and option and its underlying stock because some of the contracts that we entered didn’t get filled’’

Conclusion

At the end this is a highlight of our StockTrak Strategies using financial derivatives that we covered through this course some of them worked well.

After we liquidate (closed) all positions here is our final portfolio data:

|  |  |
| --- | --- |
| Portfolio Value | 1,126,613.26$ |
| Return Percentage | 12.66% |
| Cash Balance | 1,126,613.26$ |
| Buying Power | 2,253,226.52$ |

Following Part 2: Excel Applications.

Section 1

The strategy that I will create is Covered call: a leading strategy where investor holds long position (buys) on underlying asset like stocks and writes (Sells) 1 call option for each unit of underlying asset (stock) held. A covered call strategy used to generate income in the form of options premiums.

Since the investor wants more profit from stock price movement without giving up the stock, and the investor expects that stock pace will drop over the next six months.

The investor should use covered call strategy, he will take long on the underlying stock and write one call option for each stock he owns.

As expected by the investor, if the stock price falls the

Call option written by him will lapse and the premium

received on call option written will be the income of the investor and there will not be any need to sell the underlying stock.

furthermore, in case of call option, lower strike price commands higher premium whereas highest strike price

Section 1 continued

of $ 3,120. By doing this, as the price of the underlying is expected to fall, option will lapse, and premium will give profit to the investor.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| part a |  |  |  |  |  |  |
| Bond/Bill principal | Time to maturity | Annual coupon | frequency of compounding | Bond price | yield to Maturity | annual yield |
| 100 | 0.25 | 0 | 1 | 99.15 | 3.473% | 3.47% |
| 100 | 0.5 | 0 | 1 | 98.25 | 3.594% | 3.59% |
| 100 | 0.75 | 0 | 1 | 97.2 | 3.859% | 3.86% |
| 100 | 1 | 6.2 | 4 | 102 | 1.037% | 4.21% |
| 100 | 1.25 | 6.4 | 4 | 102.5 | 1.084% | 4.41% |

Section 2

Part1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| part b |  |  |  |  |  |  |
| Bond/Bill principal | Time to maturity | Annual coupon | frequency of compounding | bond price | yield to Maturity | annual yield |
| 100 | 1 | 6.2 | 2 | 102 | 2.07% | 4.18% |
| 100 | 1 | 6.2 | 4 | 102 | 1.04% | 4.21% |

Part2

|  |  |  |  |
| --- | --- | --- | --- |
| pays fixed and receives floating |  |  | million |
| issues fixed rate bond (liability) |  |  | 99.64095118 |
| invests floating rate bond (asset) |  |  | 100.1909485 |
| swap asset | | | 0.549997361 |

|  |  |  |  |
| --- | --- | --- | --- |
| pays floating and receives fixed |  |  | million |
| issues floating rate bond (liability) |  |  | 100.1909485 |
| invests fixed rate bond (asset) |  |  | 99.64095118 |
|  | swap liability |  | 0.549997361 |

Section 2 continued

Part3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Adidas has advantage of lower borrowing cost in both Euros and US$ over Nike However, Adidas's advantage over Nike is 0.8% (6%-5.2%) in Euros and only 0.4% (10%-9.6%) in US$. So, Adidas has comparative advantage in Borrowing in Euros and Nike has comparative advantage in Borrowing in Dollars | | | | | | | | | | | | | |
|  | |
|  | |
|  |  |  |  |  |  |  |  | |  | |  | |  | |
| Adidas to pay US$9.44% to Deutsche Bank and in return get Euros 5.2% from them | | | | | | | |  | |  | |  | |  | |
|  |  |  |  |  |  |  |  | |  | |  | |  | |
| net cost of borrowing to adidas | 9.44% | (0.16%)16 basis points benefit over direct borrowing in US$ | | | | | |  | |  | |  | |  | |
|  |  |  |  |  |  |  |  | |  | |  | |  | |
| net cost of borrowing to Nike | 5.84% | (0.16%)16 basis points benefit over direct borrowing in Euros | | | | | |  | |  | |  | |  | |
|  |  |  |  |  |  |  |  | |  | |  | |  | |
| Net benefit to Deutsche bank | 0.08% | 8 basis points benefit ignoring the currency effect | | | | | |  | |  | |  | |  | |