TradeX
Where money meets security

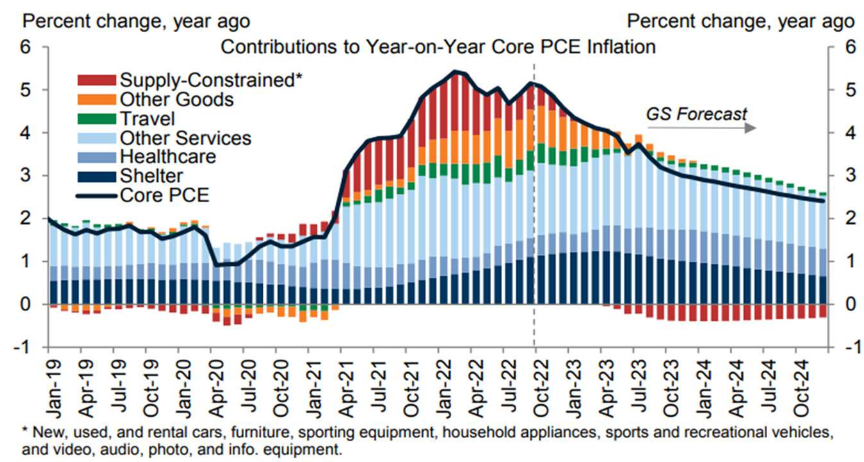
End of Period Trading Report due December 5th, 2022

Dear Investors,

In light of the conclusion of our trading period, we have compiled this final trading report for our stakeholders to give them an overview of our trading strategy given the highly volatile trading period, provide a rationale behind our investment decisions showing the good and not so good parts about our decisions, and give an overview of the performance of our portfolio at the end of the trading period.

2021 saw real economic growth of nearly 6%. US employment grew by 514,000 per month throughout the year. Policy rates were held at zero while the Fed accumulated $1.4 trillion in bonds, injecting a bolus of liquidity to ensure a complete recovery. It was also a great year for equities, with the S&P 500 up a whopping 27%.

As February 2022 approached, Russian President Putin's threats about an invasion of mainland Ukraine had started to take ground globally, with Russia formally declaring territorial war on Ukraine on February 24, 2022. This kicked off global fears about a nuclear conflict between Russia and the West, sparking stock sell-outs. Our investment cycle for this class began during this period of high volatility and extreme uncertainty keeping in mind the cascading impacts of the Russia-Ukraine War at the start of the year and related sanctions, continued supply chain disruptions due to continued COVID breakouts in China, and the resulting energy crisis in Europe and globally.

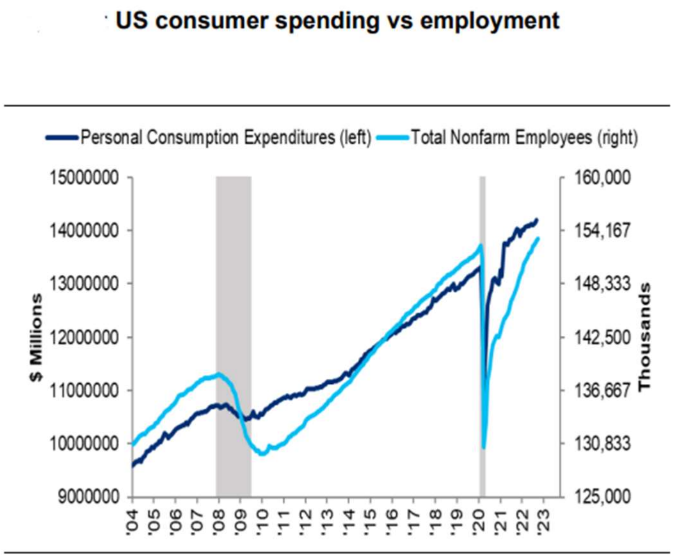


Source: Department of Commerce, Goldman Sachs Global Investment Research

Due to the continued constraints on supply chains fueled by the Russia-Ukraine conflict and China's zero-Covid measures resulted in global prices for transportation, commodities, and goods skyrocketing. This sent inflation soaring across Western nations. Inflation reached levels not seen in the past four decades, with consumer and investor confidence plummeting. Central Banks around the world, including the US, began intervening by hiking interest rates to get a grip on inflation. A year ago, the Federal Funds Rate in the US was 0.25%, and just a year later due to the Fed's intervention, it now stands at 4.00%, with it expected to peak at around 5.00% by next year.

Today, net bearishness is -22% (Haver Analytics through Nov. 18, 2022). And this bearishness remains after the S&P has fallen by 18%. In the recent minutes from the Federal Open Market Committee's (FOMC) November meeting, we learned that a "substantial majority" of FOMC members believed that it would "likely soon be appropriate" to slow the pace of interest rate hikes. It appeared from the minutes that policymakers believe tightening thus far has impacted interest rate-sensitive sectors of the economy, but inflation was still too high.

The key takeaway is that inflation was supersized by COVID and countries' response to the pandemic along with the Russia-Ukraine conflict and global supply chain issues. Hence, the monetary tightening had to be supersized as well. Now we've reached the point where monetary policy tightening can start to be downsized, and it seems like the smallest signals from the Fed about. We also note that employment freezes and layoffs in the most creative US industries and well-known companies are in the news lately. This underscores the fact that robust employment gains are behind us. In short, the full impact of policy tightening has yet to hit employment. The current backdrop is missing the good-luck component, posing



Source: Haver Analytics as of Nov. 4, 2022. Note: Grey areas are recessions.

a challenge for policymakers whose fiscal and monetary tools are less effective combating supply shocks. In the decade following the Great Financial Crisis, the Fed shifted its strategy from one of forecasting the economy and setting policy with the future in mind to reacting to inflation. The strategy was adopted because forecasts of that period did not accurately show that labor markets could expand further without stoking inflation. It was a strategy based on the "hidden supply" that allowed the economy to expand more and brought prosperity to a wider swath of society. But sticking to this approach fails during a period of supply shocks and demand instability. This has put the Fed in an untenable position, reacting to lagging developments when the US and the world needs prescient policy.

In our initial report, we expressed our concerns about the unstable economic and investing climate. We still continue to believe that the market is not likely to reward excessive risk-taking in this climate and decided to invest heavily in index funds that closely track the market and this is a poor time to be a contrarian. Global equity and bond markets rallied in the last week after Fed Chair Powell signaled he would slow the pace of rate hikes at the bank's next meeting this month. This had a direct effect on our portfolio returns which swelled to $1,051,102 at the time of market close on December 1st, 2022, up 5.11% from September 1, 2022. For the same period, the S&P 500 was up 2.77%.

Overall, the US investment climate and investor sentiment still remain highly volatile, with a majority of firms expecting a global recession in 2023. The intensity of the recession in the US and globally is something that will need to be seen. Even though the Fed signaled a pivot and markets rallied into bull market territory, we believe that the core factors driving volatility, like the Russia-Ukraine conflict, China's crackdown on Covid-zero measures, threats of Taiwan invasion, and the economic crisis in Europe stand unresolved as of writing. All of the above factors still make the global investment outlook look grim, and we believe it is best to invest money in safe assets and keep a distance from high-risk investing. This resonates with investment outlooks from major Wall-Street firms like Morgan Stanley and Goldman Sachs, who believe that equities are headed for continued volatility in the coming year and expect the S&P 500 to tread water and end at roughly where it starts at around 3,900 points. We will need to be more tactical and pay close attention to the American economy, legislative and regulatory policy, corporate earnings, and valuations.

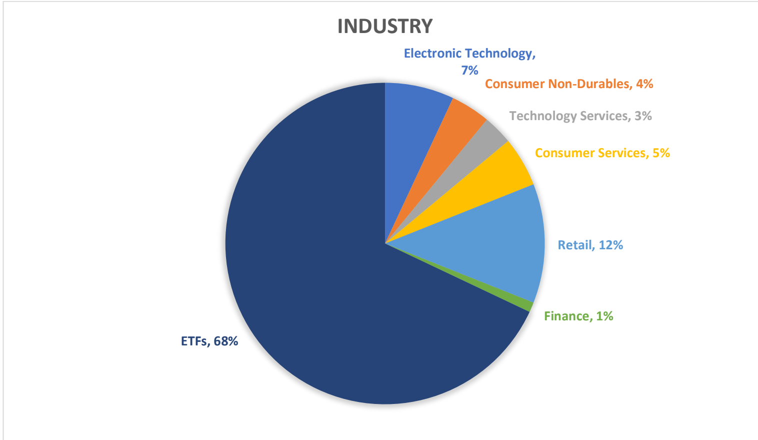
Security Selection Method and Asset Allocation

Our security selection process is based on analyzing different sectors and doing a top-down fundamental analysis, and finding undervalued stock which has growth potential in the long run. Our investment objective for this macroeconomic climate was based on low-risk index investing aimed at protecting investors' capital and closely replicating market movements. We invested in individual stocks and ETFs to diversify our portfolio and identify profit avenues.

Diversification based on Industry

Understanding how a particular industry is doing and then within that industry which companies have growth potential and the ability to give stable returns in the long-term future.

The long-term outlook for the company. Our portfolios are well-diversified across all industry sectors. We then select those stocks that we feel will offer the best chance for future growth within each market sector.



We invested a major portion in:

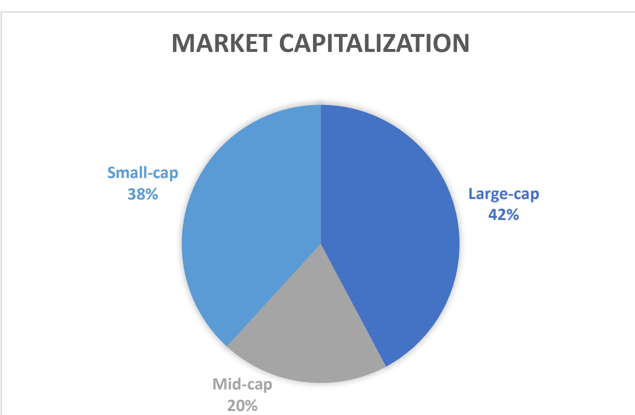
ETFs - Holding ETFs in the current market scenario was a safe bet, trying to mimic the market index. Our biggest investment by far is the VOO, Vanguard's version of a low-cost S&P 500 index ETF. It has the advantage of low average cost and a low expense ratio while giving access to a well-diversified stock portfolio consisting of the 500 largest companies in America.

Banking/Financial Stocks – The direct beneficiaries of the Federal Funds Rate jumping from 0.25% to 4% in one year were banks and financial stocks. On days when the Fed announced rate hikes, this sector outperformed. We invested in Goldman Sachs, expecting it to beat earnings estimates due to its well-diversified business, and sold it at a profit of $67 per share or 20%. We invested in Capital One Financial due to its robust cards business and growing auto-loan financing segment and plan to hold it until we turn a profit in the long run.

Retail - These stocks are usually cyclical. A cyclical stock is one whose underlying business generally follows the economic cycle of expansion and recession. A cyclical stock is a stock whose price is affected by macroeconomic or systematic changes in the overall economy. Therefore, keeping in mind the upcoming holiday season and Thanksgiving (Black Friday) and analyzing consumer spending instinct for the past 10-15 years, we invested in retail stocks.

Electronic Technology - Major reason for investing in tech stocks tend to have strong financial fundamentals, with many companies posting double-digit sales and earnings growth. Moreover, while the overall stock market tends to be volatile during economic downturns, tech stocks have historically been more resilient.

Market Capitalization



We manage both a Large Cap Portfolio and a Small Cap Portfolio. Each of these strategies has a history of above-market returns with below-market risk.

Fundamental Analysis

We screen a database of stocks based on a variety of fundamental ratios such as debt to equity, price to earnings, forward earnings per share growth rates, and EV/EBITDA. We are looking for companies that we believe will experience above-average earnings growth that can be purchased at or below average price-to-earnings ratios and is at the lower end of 52 week high- low range.

Asset Allocation

The most common asset classes for an individual investor include stocks, otherwise known as equities, bonds, also known as fixed-income securities, mutual funds, exchange-traded funds (ETFs), and real estate. Our portfolio was divided amongst Equity, ETFs, and cash. We kept a considerable amount of cash to act as a cushion given the market volatility and kept earning a minimum guaranteed return and using that money to invest later. We also believe following the market would be the best approach which is why we invested the largest part in VOO, an S&P 500 ETF that closely tracks the performance of the index with a low fee structure

Basic Technique

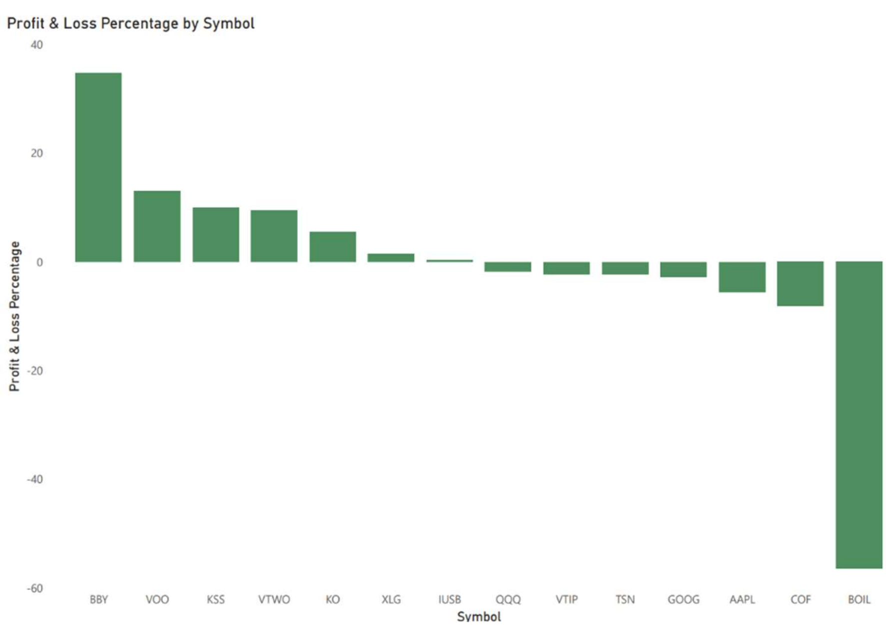
52 weeks high/low – This technique is an influential indicator. Keeping a close eye on 52 Week range, we picked up stocks that are at the lower end of the 52-week range and able to garner potential momentum in the long term based on fundamentals.

Relative Strength Index - The relative strength index (RSI) has a few major uses.

(I)The most basic use of an RSI is as an overbought and oversold indicator. This tells us if a stock is oversold, making it an undervalued security which indicates it is the right time to "buy a given security."

(II)Divergence is another use of the RSI. When the indicator moves in a different direction than the price, it shows that the current price trend is weakening and could soon reverse. Moreover, we also focused on Simple Moving Average (SMA), A simple moving average that can aid in determining if an asset price will continue or if it will reverse a bull or bear trend.

Summary of Transactions



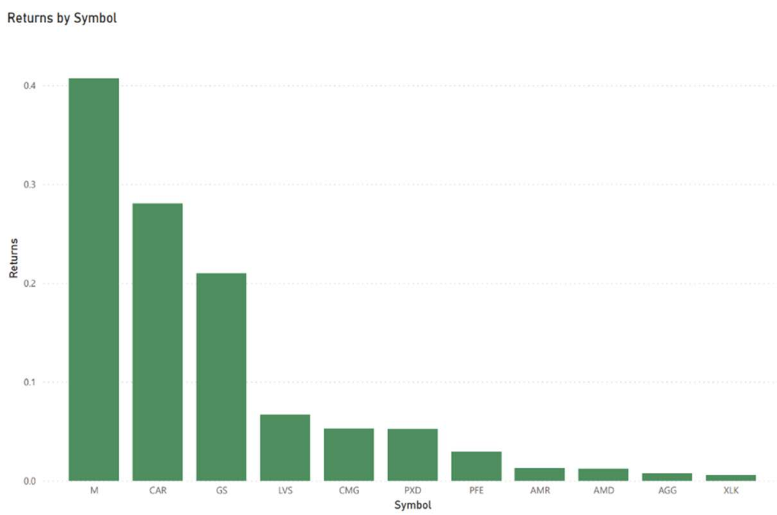
One thing that remained consistent throughout the time horizon was the top-down strategy that we followed. This was due to the current market conditions mentioned above. We are more concerned about the market cycles than security selection. This influenced our buy and sell decisions throughout the investing period.

Our initial focus was on the semiconductor industry due to its recession-resilient characteristics. We invested 21% of the total investment in the electronic technologies sector. The rationale behind this was the introduction of the CHIPS Act, which includes $52B in subsidies to increase U.S. chip production. President Joe Biden signed it into law on Aug 9, 2022, and hence we anticipated the growth of companies such as Advanced Micro Devices. However, with increasing uncertainty in the semiconductor industry, our team decided to diversify and concentrate our funds in different sectors. And hence, we exited the position with a return of 1.2%.

Currently, 12 % of the total investment is concentrated in the retail industry keeping in mind the upcoming holiday season. At the end of September, CNBC reported that among top-tier retailers, Amazon.com, Best Buy, Home Depot, and Target are boosting their capital spending in the double digits. A Gartner study that tracked capital expenditures during 2007 to

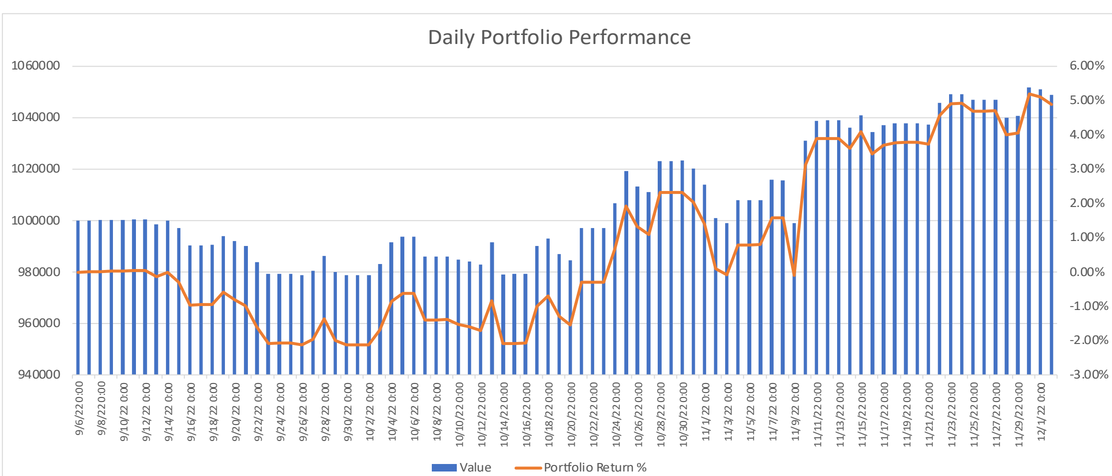
2009 economic downturn found that 60 companies that increased their investments during the two-year period saw their earnings double between 2009 and 2015. Those that failed to invest saw little change in their profit picture in the years that followed. This is the reason we believed that heavy investments by such retailers during the last quarter would result in increased profits if included in our portfolio.

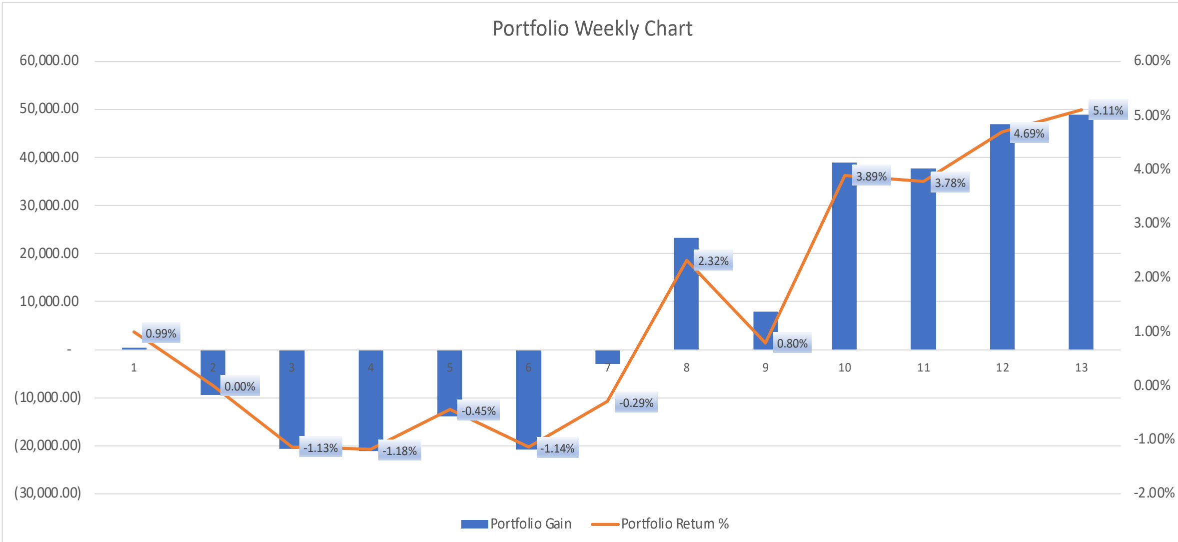
The above graph shows the returns of the open positions. Best Buy, a consumer electronics retailer gained a massive return of **34.83%.** (Refer Figure). In Q2 2022, Best Buy's stock price had fallen more than 30% as compared to the 2% decline of the broader market, and hence found that the price we paid ($64.43) was an attractive entry point. We believe that the fundamentals of the company are strong as Best Buy has been successful in increasing its revenue every single year since 2015, with an exceptionally strong performance in the previous two years. When looking at Best Buy's balance sheet and at some of the key financial ratios, we can observe that the firm's efficiency has been consistently improving over the years. This improvement is reflected by the improving inventory turnover ratio, the improving receivables turnover, and the increased return on assets. Due to the combination of these factors, we held the BBY stock.



The above graph shows the returns of the closing position. Our team claims to exit Macy's position with a profit of 40.68%. The reason we invested in Macy's is that its real estate is worth more than the company's current enterprise value and provides meaningful downside protection. Macy's announced a couple of strategic updates recently - which include opening four small-format stores. We bought Macy's at an undervalued price of $16.69 and sold it at $23.48. In addition, we anticipated a remarkable influence on consumer spending due and hence invested in M and AVIS (CAR) as well. In recent days, we also booked profit for Chipotle Mexican Grill (CMG) as it was reaching its 52-week high price. It was also crucial to maintain a well-diversified portfolio, and hence we bought bond ETF. To reduce the unsystematic risk of our portfolio. We have invested heavily in ETFs as they provide greater benefits of diversification due to their wide array of holdings.

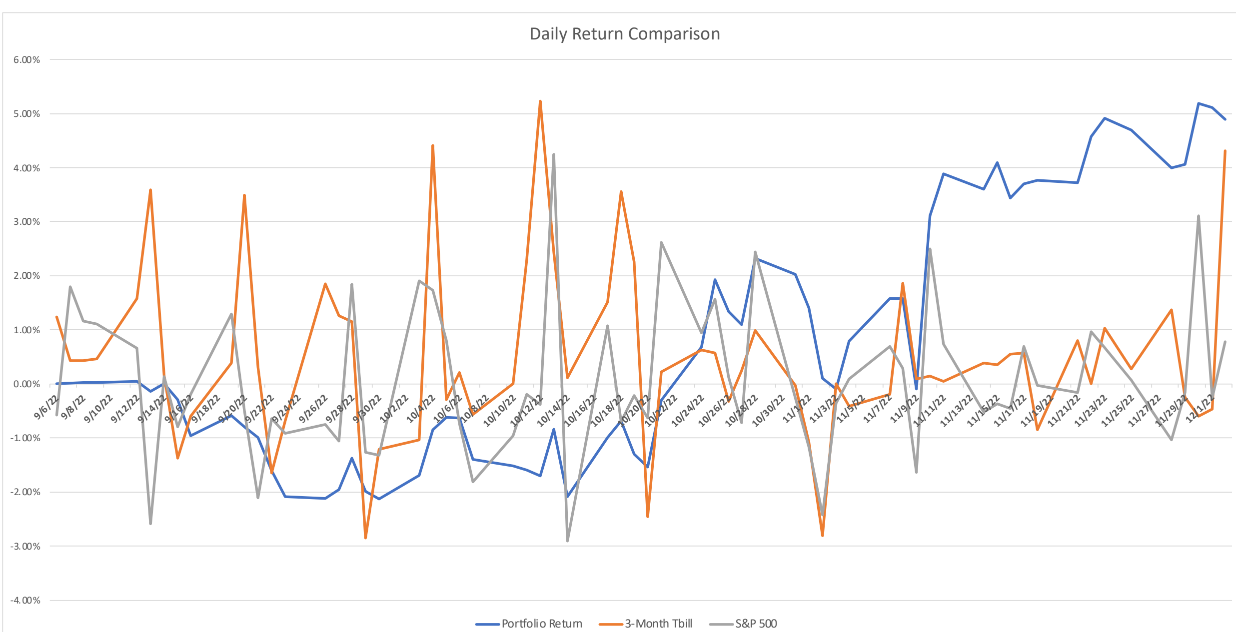
<u>Ending Summary of Performance</u>





Week from Investing	Value	Portfolio Gain	Portfolio Return %
1	1,000,328.81	328.81	0.99%
2	990,487.44	(9,512.56)	0.00%
3	979,286.78	(20,713.22)	-1.13%
4	978,805.84	(21,194.16)	-1.18%
5	986,074.21	(13,925.79)	-0.45%
6	979,218.65	(20,781.35)	-1.14%
7	997,058.82	(2,941.18)	-0.29%
8	1,023,205.53	23,205.53	2.32%
9	1,007,960.84	7,960.84	0.80%
10	1,038,916.40	38,916.40	3.89%
11	1,037,771.43	37,771.43	3.78%
12	1,046,935.40	46,935.40	4.69%
13	1,051,102.00	51,102.00	5.11%

The above graphs of daily portfolio performance capture the market volatility and how it moved with the changes in the economy when peak recession was witnessed by the market and over time, keeping our investment strategy dynamic and focused on fundamental analysis, which yielded us positive returns. Our portfolio represents a 5.11% profit in a 13-week trading period, where we started with 1 million and currently holds at 1.051 million.



Date	Portfolio Return	3-Month Tbill	S&P 500
9/6/22	0.00%	1.24%	-0.58%
12/2/22	5.11%	4.31%	0.78%

The above graph exhibits a comparison of our portfolio performance with the market index ETF S&P500 and risk-free return 3-month T-bill. Over time our portfolio was able to beat the market index.

The good parts of our portfolio..

Our investment in VOO – Vanguard S&P 500 ETF was one of our most profitable investments, registering a profit of $21,526 with a 13% return. Holding a market ETF that shadows the market was a safe bet with a low transaction cost and expense ratio. And as we know, indexing seeks to match the risk and return of the overall market, on the theory that over the long term, the market will outperform any stock picker. Few other good performers in our portfolio were The Goldman Sachs Group, Inc. (GS), Avis Budget Group, Inc. (CAR), Best Buy Co., Inc. (BBY), and Macy's, Inc. (M).

The not-so-good parts…

Although we did our best to avoid risky assets, we were incorrect in our judgment call about investing in the risky BOIL - ProShares Ultra Bloomberg Natural Gas ETF, which seeks a 2x return of its underlying benchmark in a single day and is best suited for ultra-short duration high-risk investing. We are currently down 56% on this investment and recognize that this bet turned out costly in dragging our portfolio value down. Although the energy sector has outperformed in previous quarters, it has been a laggard since we invested in it. We also hold some stocks like those of Inc. (AAPL), Capital One Financial Corp. (COF), and Google (GOOG), which we believe are strong stocks to hold for the long term, and we will continue to hold them given their intrinsic value.

Statistical Analysis

We calculated portfolio beta as the weighted average of beta of the individual stock. Keeping in mind the performance measures of the portfolio, we can see that the portfolio is generating a Sharpe ratio of 1.22 which means that returns are adequate relative to the amount of risk taken. A positive Jensen's alpha shows an average return that is above the predicted CAPM model.

Weekly Returns Summary	
Beta	1.14
Variance	0.069
Standard Deviation	0.263
Sharpe ratio	1.94
Treynor ratio	0.73
Jensen measure	2.59

Daily Returns Summary	
Beta	1.14
Variance	0.532
Standard Deviation	0.730
Sharpe ratio	1.22
Treynor ratio	0.78
Jensen measure	2.54

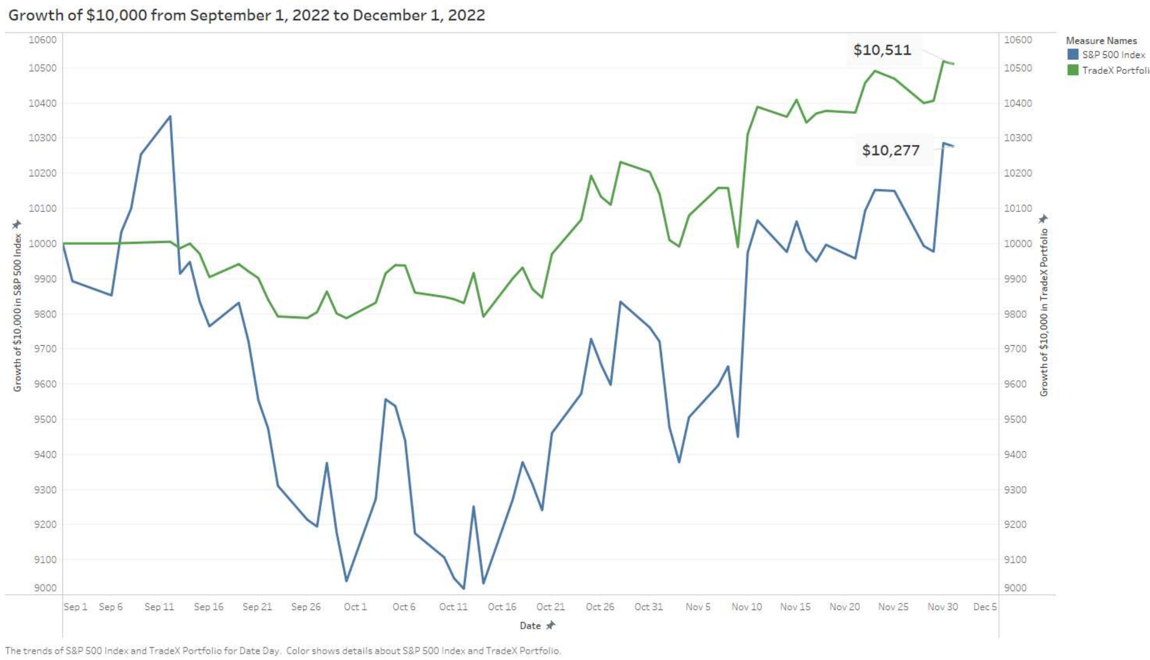
Our Daily Returns Sharpe Ratio of 1.22 means that for every unit one unit of risk, we were rewarded by 1.22% of return.

Ticker	Beta	Weight	Variance
QQQ	1.07	7.20%	0.04%
VTIP	0.42	0.60%	0.00%
AAPL	1.25	7.20%	0.07%
IUSB	1	1.10%	0.00%
BOIL	3.96	2.20%	0.61%
XLG	1	3.60%	0.03%
GOOG	1.05	3.70%	0.08%
VOO	1	45.80%	0.03%
BBY	1.48	2.10%	0.11%
VTWO	1.13	13.50%	0.03%
KSS	1.63	7.70%	0.14%
COF	1.43	1.20%	0.15%
KO	0.58	1.60%	0.01%

$$S^2 = \frac{\sum (x_i - \bar{x})^2}{n-1}$$

This table shows the weights of every open position in our portfolio, along with their individual variances that we calculated using the formula. We calculated the diversification ratio of 0.26 using the portfolio standard deviation and the weighted average of every individual security's standard deviation. This means that we were able to reduce total risk by 74% in our portfolio.

Conclusion



To give a fair understanding of our performance in this trading session, we would like you to imagine investing $10,000 in two assets – the S&P 500 index (a direct investment in the index is not possible) and our portfolio. Being newbies to investing, we did our best to implement our strategy of low-risk investing and keeping your money safe in this environment with limited upside and unlimited downside. As we can see from the above growth chart, at the end of the session on December 1, you would have $10,511 if you chose to invest in our portfolio and $10,277 if you invested directly in the S&P 500 index if it were possible.

We took a cautious stance as we reached the fourth quarter of 2022. Given the recessionary market circumstances, we concentrated on holding onto excess cash so that we could utilize it for hedging when the time came, and the remaining sum was allocated to long-term investments in stocks. Then, as we advanced, we made significant investments in ETFs and index funds. Since large-cap companies are more mature and established investments, we retained 45% of our portfolio in them.

Also, if we had a longer horizon to play with, we would look into expanding our portfolio by researching Emerging Markets like India, where the market is reaching new highs. The 30-share BSE Sensex climbed to settle at 63,284.19, its fresh record closing high. Emerging Markets present great opportunities to grow money exponentially by researching and investing in value stocks at an early stage.

This has been a wonderful learning opportunity to manage an actual portfolio. TradeX performed admirably and took first place in the trading competition. Therefore, in light of the turbulent market situation, we will keep using this investment strategy and implement newer ones as we have more resources and knowledge on our hands. We thank you for choosing TradeX and hope you will continue to invest with us and entrust us to keep your money growing and safe simultaneously.

Sincerely,

TradeX
Where money meets security