

Portfolio Management and Capital Management **Final Report**

Tony Attallah, Marco Arellano, Maximus Moore, Tyler Kam

California Polytechnic University, Pomona

FRL 4331 - Seminar in Portfolio Management and Capital Management

May 3, 2024

Our portfolio “Double O Seven” is actively managed by four investment managers, Tony Attallah, Marco Arellano, Maximus Moore, and Tyler Kam. Each of them contributed to this final report to give an overview of our portfolio’s performance and the reasoning behind our investment decisions. Tony contributed to the paper’s formatting, questions one and two, in addition to the tables for asset class and target asset allocation. In addition, question six. Marco contributed to question three and added the tables. He also did question five and added citations. Maximus contributed to questions two and six and helped fix the correct formatting. Tyler contributed to finding the Sharpe ratios, beta, and alpha, for question four, the tables, and contributed to question six.

The following table is a visualization of our target asset allocation as of April 25, 2024:

Asset Class	Target Asset Allocation (%)
U.S. Large Cap Stock	85%
U.S. Small Cap Stock	8%
Bond (U.S. Treasury)	5%
Cash	2%
Total	100%

Over time we began to adjust our target asset allocation due to changes in our outlook on the stock market and economy. The following table is a visualization of our actual asset allocation as of April 25, 2024:

Asset Class	Actual Asset Allocation (%)
U.S. Large Cap Stock	93.4%

U.S. Small Cap Stock	2.0%
Bond (U.S. Treasury)	4.6%
Cash	0%
Total	100%

Comparing our target asset allocation to our actual allocation we started to deviate from U.S. small-cap stocks to large-cap stocks. Poor performing small-cap stocks early in the simulation, such as Redfin and Chegg, signaled this migration to large caps. We reasoned that since the small-cap sector has been performing poorly compared to the large-cap sector, nothing promising towards the end of the competition would boost small-caps. We wanted to take a slightly safer approach and allocate the funds to large-cap stocks that would not fluctuate in price as much. Additionally, we invested all our cash in large caps for the same reason. We also continued to maintain our position in our bond hoping bond prices would rise as the Federal Reserve cut rates. However, this was not the case as no rate cuts occurred during the simulation.

The following table indicates the list of transactions made from 3/18 through 4/12.

Week	Company	Ticker	Transaction	Price (\$)	Share	Value (\$)
3/18 - 3/22	Lattice Semiconductor Corp.	LSCC	SELL	\$78.85	455	35,876.75
3/25 - 3/29	Oracle Corp.	ORCL	SELL	\$126.64	250	31,660.00
3/25 - 3/29	NextEra Energy Inc.	NEE	BUY	\$62.88	250	(15,720.00)
4/1 - 4/12	JP Morgan Chase & Co.	JPM	BUY	\$196.17	30	(5,885.10)

Our team's BEST trading decision since week two was Oracle Corp. (ORCL). Although Oracle was initially on our watchlist, we saw an opportunity to capitalize on its upcoming earnings for the week of (3/11-3/15). We purchased 200 shares of ORCL on March 7 at \$113.63, investing \$22,726. We observed a high demand for AI and Oracle's cloud service infrastructure which helped us confidently make our decision to purchase the stock. After earnings exceeded expectations, ORCL rallied to \$126. The week after earnings, we bought 50 additional shares at \$128.18 per share, at \$6,409, continuing Oracle's upward trend in value. After assessing market conditions during week nine, we decided to exit our short-term position on ORCL. We sold all 250 shares for \$31,660, realizing a net profit of \$2,525, a P/L of 7.98%. Afterward, ORCL began to see a gradual drop in share price.

Our WORST trading decision was Advanced Micro Devices (AMD). Our team first purchased 170 shares at \$170.60, totaling \$29,002. We bought an additional 120 shares at \$180.40, totaling \$21,648.00. In week 7, we decided to sell all 290 shares for \$51,089.30, a \$439.30 profit. However, we mistakenly thought AMD would rebound in value like other hot AI chipmakers. That was not the case. We purchased 380 shares at \$178.38, totaling \$67,525.40. AMD dropped in value after a disappointing CPI report, underwhelming news, and lower sentiment for AI chips. At the end of the simulation, AMD posted a dismal P/L of -17.48 % and a loss of -\$11,802.20.

		<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Alpha	Intercept	0.0002	0.0007	0.3410	73.46%
Beta	Market Excess Return	1.2324	0.0989	12.4615	0.00%

Some financial tools that gave our team great insight into our performance relative to the market were the Sharpe ratio, Beta, and Alpha. Our portfolio's Sharpe Ratio was calculated to be -0.0271 which was higher than the S&P 500's -0.0579. This is consistent with the returns

showing that our portfolio outperformed the market. We ended up with a Beta of 1.23, which is greater than 1, revealing that our portfolio was moving more aggressively than the S&P 500 Index. Lastly, our calculated Alpha was 0.0002 which means our portfolio outperformed the S&P 500 Index but by a very minimal margin. The Alpha's P-value was 73.46% which is above the 10%, 5%, and 1% thresholds meaning it is not statistically significant at all three levels.

	Date	Your portfolio (\$)	S&P 500 Index
Beginning Value	2/12/2024	1,000,000	5,026.61
Ending Value	4/19/2024	994,022.18	4,967.23
Return		-0.0060 (-0.60%)	-0.0118 (-1.18%)

Our portfolio ended with a return of -0.60% which does not look great at first sight.

However, comparing our portfolio to the S&P 500 we were pleasantly surprised to see that we outperformed the market, which returned -1.18%. Although the return on our portfolio is not what we had set in mind at the start of the simulation, we successfully fulfilled our goal of outperforming the S&P 500 Index. This overall performance of our portfolio reveals that the team made financially sound investments and successfully mitigated large losses in comparison to the market.

Name	Ticker	Return (%)	Profit/Loss (\$)
Winners			
Alphabet, Inc.	GOOGL	8.74%	10,153.00
JPMorgan Chase & Co.	JPM	5.80%	3,363.90
Losers			
Tesla, Inc.	TSLA	-18.81%	-15,327.95
Advanced Micro Devices, Inc.	AMD	-17.48%	-11,802.20

Our top two winners for our portfolio simulation as of April 19th are Alphabet, Inc. (GOOGL) and JP Morgan Chase & Co. (JPM). The total profit from GOOGL totals \$10,153.00, an 8.74% return. JPM totals \$3,363.90, a 5.80% return. Google was initially performing negatively until it rebounded and became our best-performing stock. For example, when Google

rolled out its Gemini AI chatbot in February, the stock price dropped 9% (Sriram, 2024). Despite the disappointing roll-out of Gemini AI, Google rebounded in March after news broke out about talks with Apple to build Google's Gemini AI into its iPhones once Google fixes flaws in Gemini AI (Coulter, 2024). In addition, Sundar Pichai, CEO of Google, has been restructuring the company to improve efficiency within its AI and computing platforms (Pichai, 2024).

Essentially, Google expects to lay off an undisclosed number of employees to cut costs. Another factor that affected Google was the CPI Inflation report. CPI rose 3.5% in March, higher than expectations, leading to negative market sentiment (Cox, 2024). Nonetheless, shares rebounded as investors quickly focused on the upcoming April 25 1Q24 earnings, which led to an increase in share price.

JP Morgan Chase & Co. (JPM) maintained consistent growth throughout the simulation. Its earnings report was released on April 12th. According to the report, JPM recorded a 6% profit increase in 1Q24 to \$13.42 billion, an EPS of \$4.44, and revenue increased to \$42.55 billion, all exceeding analyst expectations (JPMorgan Chase, 2024). Investors expected JPM to raise guidance for the upcoming quarter to \$3 billion. However, that was not the case, which led to JPM's shares dropping by 6% even with good earnings. Additionally, JPM indicates that its commitment to \$20 million in philanthropy for housing will continue for underserved communities (JPMorgan Chase, 2024). JPM and other larger banks expect to perform better than smaller banks in the upcoming quarter due to exposure in the commercial real estate sector (Son, 2024).

Our top two worst-performing stocks were Tesla, Inc. (TSLA) and Advanced Micro Devices, Inc. (AMD) as of April 19th. Tesla was once a well-performing stock at the beginning of the simulation. Tesla was trading at around \$202 share price on March 1st. At the end of the

simulation, Tesla was trading at \$147.05, a 27.23% decrease during that timeframe. Several factors tie into its poor performance. Since its press release about lower forecasted sales for 2024, Tesla's decline in share price has led investors to lose confidence in lower demand for EV sales in China and cut 10% of its workforce (Kolodny, 2024). Analysts expected 457,000 in vehicle deliveries from Tesla, however, they delivered 386,810, a 15% decline (Krisher, 2024). In addition, Tesla executives announced that they would depart from their roles during the layoffs (Kolodny, 2024). Despite Tesla's efforts to keep up with its competitors, continuing problems have led to negative sentiment in the market while its share price continues to decline.

Advanced Micro Devices, Inc. (AMD) saw a steep decline in value throughout the end of the simulation. Since March 8th, AMD's value has fallen from \$211 to \$146.64 due to several factors. For instance, AMD was riding off high demand and volume of trading activity within the AI chip sector. Other factors contributing to its loss in value include the CPI inflation report, its release for preprocessing, AI inference, and postprocessing for AI-driven embedded systems acceleration still in development (Szabados, 2024). Investors and analysts saw its underwhelming numbers as an indication of falling behind the competition. All of which led to a steep decrease in value for AMD leading up to its 1Q24 earnings. A week after the end of the simulation, AMD announced its earnings on April 30th. AMD CEO Lisa Su announced the lineup of new MI300 chips that could generate \$4 billion in revenue underwhelming investors' expectations (King, 2024).

Throughout completing this course, we learned a lot about portfolio management and had the opportunity to apply learned concepts to our simulation. Some key topics we covered during the course that helped us were economic indicators, asset allocation, the power of diversification, and understanding valuation multipliers. Utilizing everything we learned, we constructed a

portfolio that outperformed our benchmark (S&P 500) and came close to giving us a positive return throughout the simulation. Overall, we had an amazing experience with the simulation, because we applied the Cal Poly “learn by doing” philosophy with our Stock Trak portfolio. One suggestion that we thought could benefit the simulation is having a trading dollar amount threshold per week instead of a trade volume threshold. For example, you must trade at least \$20,000 per week which could be buying, selling, or shorting transactions. This addition can also work well if regulated in conjunction with meeting trade volume requirements per week. By enforcing a certain dollar amount per week, it will push teams to better consider their current stock holdings and risk profile mindset since more money is at stake. In addition, we think a good suggestion would be for teams to complete a more in-depth analysis of trading decisions and market movements, week by week. This will encourage teams to be more connected and updated on financial news and their portfolio. Nevertheless, these suggestions can help improve our understanding of managing portfolios.

References

- Coulter, M. (2024, March 18). *Apple in talks to let Google's gemini power iphone AI features, Bloomberg News says | Reuters*. Reuters. <https://www.reuters.com/technology/apple-talks-let-googles-gemini-power-iphone-ai-features-bloomberg-news-says-2024-03-18/>
- Cox, J. (2024, April 10). Consumer prices rose 3.5% from a year ago in March, more than expected. *CNBC*. <https://www.cnbc.com/2024/04/10/cpi-inflation-march-2024-consumer-prices-rose-3point5percent-from-a-year-ago-in-march.html>
- JPMorgan Chase increases housing affordability commitments with additional \$20 million in philanthropy and expanded customer offerings*. (2024, April 8). <https://www.jpmorganchase.com/news-stories/20million-housing-affordability-commitment>
- JPMorgan Chase. (2024). *1Q24 Financial results*. <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/investor-relations/documents/quarterly-earnings/2024/1st-quarter/fa4917a5-ae5c-4b97-a30d-f07e726e1021.pdf>
- King, I. (2024). *AMD slides after AI chip forecast misses lofty estimates*. Yahoo! Finance. <https://finance.yahoo.com/news/amd-gives-tepid-forecast-amid-204613416.html>
- Kolodny, L. (2024, April 15). Tesla execs Drew Baglino and Rohan Patel depart as company announces steep layoffs. *CNBC*. <https://www.cnbc.com/2024/04/15/tesla-execs-drew-baglino-and-rohan-patel-depart-amid-steep-layoffs.html?qsearchterm=tesla>

- Kolodny, L., & Iordache, R. (2024, April 15). Tesla will lay off more than 10% of global workforce: Read the Elon Musk memo. *CNBC*. <https://www.cnbc.com/2024/04/15/tesla-shares-dip-in-premarket-trade-on-global-layoff-reports.html>
- Krisher, T. (2024, April 2). Tesla sales tumble nearly 9% as competition heats up and demand for EVs slows | AP News. *AP News*. <https://apnews.com/article/tesla-sales-fall-electric-vehicle-demand-slows-1ce56d5948f9f96235b9c809e3380108>
- Pichai, S. (2024, April 18). Building for our AI future. *Google*. <https://blog.google/inside-google/company-announcements/building-ai-future-april-2024/>
- Reuters. (2024, April 17). *Google lays off employees, shifts some roles abroad amid cost cuts*. [www.reuters.com. https://www.reuters.com/technology/google-lays-off-employees-shifts-some-roles-abroad-amid-cost-cuts-2024-04-17/](https://www.reuters.com/technology/google-lays-off-employees-shifts-some-roles-abroad-amid-cost-cuts-2024-04-17/)
- Sriram, A. (2024, February 22). *Google to pause Gemini AI model's image generation of people due to inaccuracies* | reuters. Reuters. <https://www.reuters.com/technology/google-pause-gemini-ai-models-image-generation-people-2024-02-22/>
- Szabados, D. (2024, April 9). AMD Extends Leadership Adaptive SoC Portfolio with New Versal Series Gen 2 Devices Delivering End-to-End Acceleration for AI-Driven Embedded Systems. *AMD*. <https://www.amd.com/en/newsroom/press-releases/2024-4-9-amd-extends-leadership-adaptive-soc-portfolio-with.html>
- Son, H. (2024, April 12). JPMorgan Chase shares drop after bank gives disappointing guidance on 2024 interest income. *CNBC*. <https://www.cnbc.com/2024/04/12/jpmorgan-chase-jpm-earnings-q1-2024.html>