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The Impact of Different Trading Strategies on the Same Portfolio

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Abstract: The frequent occurrence of political events, the spread of the epidemic and changes in policies of various countries have made the market more volatile. Due to the instability of the overall economic environment, investors are increasingly focusing on using strategies to improve returns, so this article selects several hedge fund trading strategies, analyzes the same trading portfolio, and compares the performance of different trading portfolios. Different effects of the same combination give spirits to investors when making transactions. The market neutral trading strategy is effective for the trading combination of F and NVDA. Based on different data, the long-short equity trade strategies are not completely effective, and the credit arbitrage trade strategy is not suitable for this trading combination. Market neutral trading strategies and long-short equity trade strategies basically meet the combination of F and NVDA, but due to the possibility of credit rating fluctuations, credit arbitrage trade strategy does not meet this combination. These different effects reflect some of the underlying factors in the market, so the analysis in this article will improve investors' understanding of investment strategies and change their previous trading thoughts. Taking these effects into consideration can help investors effectively avoid potential risks, make better choices, or obtain more returns.

Keywords: trade strategies, portfolio return, different outcomes

1. Introduction

Due to the influence of the international political situation and changes in the fiscal and monetary policies of various countries, the economic environment has become very unstable. Therefore, people want to know more about ways to ensure or improve the returns of the stock market, and various strategies of hedge funds have also been paid attention to. This article will select three of these trading strategies to analyze the same trading portfolio, to compare the impact of different trading strategies on the same trading portfolio. People can make better choices and decisions in the stock market based on these influences.

2. Literature Review

The Equity market neutral model shows that a market neutral strategy increases stability and improves profitability [1].The new feedback control strategy shows the flexibility of trading returns decoupled from market behavior to investors, i.e., satisfying certain "market neutrality conditions", whether the

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market rises or falls, the value of the account is higher than its initial value [2].Theory suggests that long/short equity hedge funds return from stock market directional and spread betting [3].The article discusses the similarities and differences between the two strategies, although market neutral and long/short stocks are two styles that often overlap in statistical testing or in the minds of their investors [4].The evidence suggests investing based on momentum and positive feedback trading in the presence of financial anomalies, particularly in the presence of value anomalies. This result provides a plausible illustration for the feeble or negative exposure to value exceptions, i.e., active investment exposure to value/growth stocks [5].The analysis shows that simple ratios, for example, price-to-earnings (P/E) are also extensively used to quickly approximate valuations and are often used together with discounted models of cash flow [6].The parameters of interest in the proposed paper suggest that the PEG ratio serves as an important indicator, providing a future perspective for companies to estimate intrinsic value, providing statistical analysis [7].A closer analysis of the components of long-short trades shows that momentum strategies purchase countervailing contracts and sell futures contracts. There is also a lower correlation between momentum returns and traditional asset class returns [8].The results show that, in the best portfolios, the improvement brought by momentum indicators is the largest for portfolios formed by the triple-compound value measure and considering the momentum of stock price can improve the profit of the portfolio [9].Credit default swap spread data collected by credit derivatives brokers indicates that a firm's credit default swap spread is the annual cost of protecting a firm from default [10].The investigation of whether stock-credit market integration is related to arbitrage barriers suggests that temporal changes in firm stock and credit market integration are associated with firm-specific arbitrage barriers [11].This website page shows the historical daily adjust close price of F [12].This website page shows the historical daily adjust close price of NVDA [13].

3. Data

In this paper, the analysis is based on two companies by applying different strategies. Ford Motor Company (F) is an automotive company with many multinational operations and is one of the most prestigious automotive companies in the world. It is headquartered in Dearborn of Michigan. The company's core business includes a series of automotive-related businesses such as design, manufacturing, sales, and after-sales service. Vehicles produced include high-quality sedans, SUVs, electric trucks, and luxury Lincolns. In addition, Ford Motor Company provides auto credit through Financial Credit Corporation, which is committed to enhancing the company's leadership in energy conservation and autonomous driving.

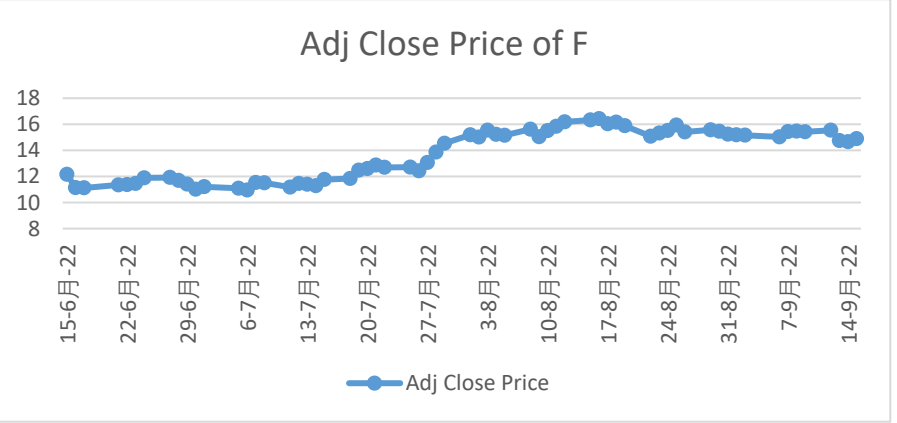

Figure 1: adjust close price of F.
Source: yahoo finance [12]

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Nvidia Corporation (NVDA) is a company that designs and sells fabless semiconductors for graphics processors. It is founded in January 1993 and headquartered in the center of Silicon Valley, which is in Santa Clara of California. NVDA also primarily designs game consoles such as the Xbox and PlayStation. NVDA's most famous product lines are the GeForce series, the Quadro series, and the Tesla series. These product lines are designed for individual gamers, professional workstations, and high-efficiency computing, respectively, according to their needs. Although NVDA started out in the graphics card business of PC computers, it has also been involved in designing mobile chips, but its response has been unsatisfactory. Instead, it has used these experience in recent years to develop into the artificial intelligence market.

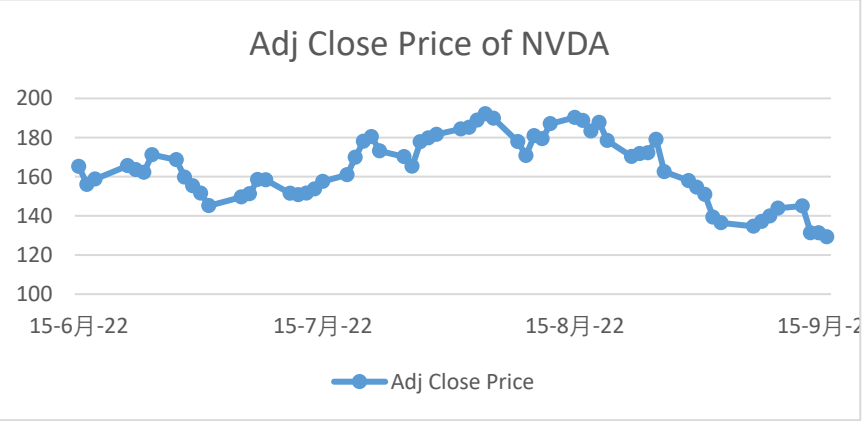

Figure 2: adjust close price of NVDA.
Source: yahoo finance [13]

4. Strategies

This article will compare the results of three different trading strategies, market neutral trade, long-short equity trade and credit arbitrage, for both F and NVDA, and analyze the theoretical basis and advantages and disadvantages of these three trading strategies.

4.1. Market Neutral Trade

A market neutral strategy is an investment strategy often employed by investors or managers in order to profit from market price fluctuations while attempting to completely avoid some other form of market risk. A market-neutral strategy typically achieves its goal by taking matching long and short positions in different stocks, reducing the impact of broader market volatility while increasing the returns for making good choices. The advantage of the market neutral strategy is that it provides a diversified portfolio and reduces risks; and with the reduction of transaction costs, the marginal profit will increase; A portfolio constructed according to a market-neutral strategy has little to do with other asset classes and has little impact on the market. However, a market-neutral investment strategy is not a completely risk-free arbitrage. The danger lies in the fact that, despite the help of complex and expensive quantitative analysis techniques, fund managers usually decide the long and short positions in the asset portfolio based on their subjective judgment. On the basis of high costs, this strategy can lead to abnormally large losses in the event of a misjudgment or if the performance of long stocks is worse than the performance of short stocks.

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4.2. Long Short Equity Trade

A long-short equity strategy is a popular strategy used by hedge funds in which long positions are invested in stocks with higher returns and short positions are invested in stocks with lower returns. The rationale is that the value of the long position is expected to increase while the value of the short position is expected to decrease. A more sophisticated approach to constructing this portfolio is to deploy equal amounts of capital in each sector's long and short positions to form a sector-neutral portfolio. A portfolio constructed in this manner helps protect against losses during a market crash, protects the portfolio's performance from any sector price declines, and makes the portfolio less volatile. By using a long-short equity strategy, it is possible to earn money by buying undervalued stocks and selling overvalued stocks. Between one buy and one sell, if the risk is assumed to be fully hedged out, the fund manager can earn a return on both stocks. Because of the short component, fund managers using a portfolio of long-short equity strategies can make money even in a bear market. In a traditional portfolio, the fund manager has to find uncorrelated or even negatively correlated stocks to diversify risk as much as possible; in long-short equity strategies, it is the opposite, their fund manager needs to find highly interrelated stocks to diversify risk. Long-short equity strategies are easier. However, the long-short equity strategy also has some disadvantages that cannot be ignored: in constructing long-short equity portfolios, managers and investors needs to hold both long and short positions, which increases trading commissions and shock costs. In addition, the cost of borrowing securities when selling short can also increase the trading cost of long-short portfolios. After the long-short trade is constructed, the fund manager often needs to rebalance the portfolio to maintain a certain risky position as the long-short stock price moves. When a bull market arrives, hedge funds with long-short equity strategies have difficulty outperforming traditional strategy funds and markets due to the presence of short positions in the long-short portfolio.

4.3. Credit Arbitrage Trade

Capital structure arbitrage and event-driven trading underlie most hedge fund credit strategies. Managers and investors focus on the relative value between senior and junior securities of the same corporate issuer. They also trade securities from different companies but of equal credit quality, or rollovers in complex capital in other structured debt instruments such as mortgage-backed securities or mortgage debt. Hedge funds' credit strategies focus more on credit than on interest rates or rates of return. During periods of strong economic growth, credit funds tend to boom when credit spreads shrink. But when the slowdown and contagion of economy erupt, they can lose money. Bond selection skills are particularly important given huge risk of default and large diversification of high-yield bonds. Rather than relying solely on accounting statements or credit ratings provided by rating agencies, seasoned fund managers conduct internal due diligence to avoid stepping on landmines.

5. Results

By understanding these three different trading strategies, the results can be interpreted and analyzed as follows.

5.1. Market Neutral Trade

People would choose to go long F and short NVDA, because the performance of F in is strong, while the situation of NVDA is not so satisfactory. In terms of volume allocation, 83% was allocated to F, 17% to NVDA, and the return of the trading portfolio was 21.56%.

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Table 1: Three trades based on market neutral strategies for F and NVDA.

Trade	Symbol	Quantity	Weight	Price Paid	Last Price	P/L	%	Total P/L	Total %
1	F	500	83%	13.18	15.03	925.00	14.04%	5258.00	21.56%
	NVDA	-100	17%	177.98	134.65	4333.00	24.35%		
2	F	128	56%	13.18	15.03	236.80	14.04%	4569.80	23.45%
	NVDA	-100	44%	177.98	134.65	4333.00	24.35%		
3	F	500	56%	13.18	15.03	925.00	14.04%	17867.03	23.45%
	NVDA	-391	44%	177.98	134.65	16942.03	24.35%		

Market Neutral means Beta for the entire portfolio is zero. The formula is Bp=$W_a\beta_a$+$W_b\beta_b$, where Bp is the beta of the portfolio, W_a is the weight of stock a, β_a is the beta of stock a, W_b is the weight of stock b, and β_b is the beta of stock b. The beta of F is 1.29, and the beta of NVDA is 1.65; In the trade(Trade 1), the amount of F is 500, and the amount of NVDA is -100. The total profit of this portfolio is 5258.00 and the total return is 21.56%. . If the overall beta of the portfolio is 0 or close to 0, the number of F should be reduced to 128(Trade 2) or the number of NVDA should be increased to 391(Trade 3). When the number of F is 128, the total profit of this portfolio is 4569.80, and the total return is 23.45%; when the number of NVDA is 391, the total profit of this portfolio is 17867.03, and the total return is 23.45 %. It is clear that the overall return of the portfolio increases significantly if Market neutral trade is used.

5.2. Long-Short Equity Trade

Under the long-short equity trade strategy, people tend to be long F and short NVDA. In addition to the recent strong performance of F, the time to make the transaction is right next to the time of F quarterly dividends. On the afternoon of July 27, Ford Motor Co. CEO Marion Harris talked about the company's second quarter 2022 results, saying that Ford's strong performance and the attitude of its executives are likely to lead to higher prices. Fortunately, I happened to make the trade on this day, so this is a good way to be long F. opportunity. In terms of volume allocation, 83% is allocated to F and 17% to NVDA, giving the portfolio a return of 21.56%.

Table 2: Trade based on long-short equity strategies for F and NVDA.

Symbol	Quantity	Weight	Price Paid	Last Price	P/L	%	Total P/L	Total %
F	500	83%	13.18	15.03	925.00	14.04%	5258.00	21.56%
NVDA	-100	17%	177.98	134.65	4333.00	24.35%		

5.2.1. Long-short Equity Trade Based on PE

Value investing is buying stocks when prices are lower, and the company is not popular. We should buy stocks with low P/B ratios (below 1 or 2), low PE ratios (below 10) and high dividend yields (> return on the USA Treasury Bonds or above 3% or 4%). The P/B ratios of F are 1.15, below 2; PE ratios are 4.61,below 10 recently, and high dividend yields is above 3%. The P/B ratios of NVDA are 16.45, far above 2; PE ratios are 47.71, far above 10, and high dividend yields is far below 3%. So, long F and short NVDA, and long-short equity trade strategy based on PE is also effective for this trading combination of F and NVDA.

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5.2.2. Long-short Equity Trade Based on PEG

PEG ratios are price earnings ratio (price/earnings) divided by growth rate. If (P/E)/(G*100) > 1, invest; if (P/E)/(G*100) < 1, sell. If we want to buy growth stocks ,we should avoid overpaying. The PEG ratios of F are below 1, and the PEG ratios of NVDA are above 1. If follow this strategy to trade, we should long NVDA short F, However, if this approach is followed, the returns of both F and NVDA will be negative, which means that such a trade will result in simultaneous losses for both stocks. Therefore, the long-short equity trade strategy based on PEG is not applicable to the F and NVDA portfolios.

5.2.3. Long-short Equity Trade Based on Momentum

Momentum Investing has a lot of statistical evidence to support it. There is a formula to calculate: 5 Day Moving Average Price=[P(-5)+P(-4)+P(-3)+P(-2)+P(-1)] /5, where P(-5) means the adjust price of countdown Day 5,P(-4) means the adjust price of countdown Day 4, P(-3) means the adjust price of countdown Day 3, P(-2) means the adjust price of countdown Day 2, P(-1) means the adjust price of countdown Day 1.If moving average > current price, buy; if moving average < current price, sell. The moving average of F is higher than current price, and it has a tendency to rise. The moving average of NVDA is lower than current price, and it has a tendency to decrease. So ,we should long F and short NVDA. Obviously, the long-short equity trade strategy based on momentum is also applicable to the trading combination of F and NVDA.

Table 3: F and NVDA's recent moving average price.

Symbol	F	NVDA
100 Day MAP	13.62	175.12
50 Day MAP	13.85	167.98
20 Day MAP	15.61	168.95
10 Day MAP	15.37	156.17
5 Day MAP	15.19	143.58
Current Price	13.18	177.98

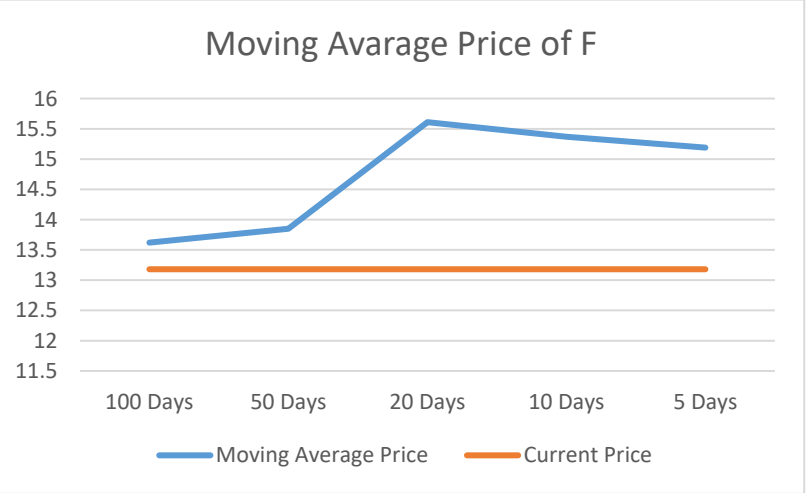

Figure 3: Moving average price and current price of F.
Source: yahoo finance [12]

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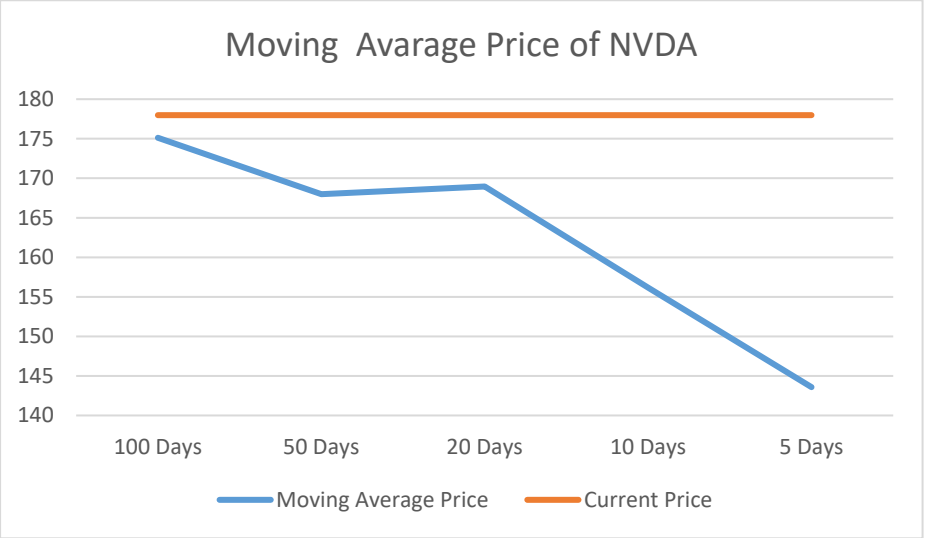

Figure 4: Moving average price and current price of NVDA.
Source: yahoo finance [13]

5.3. Credit Arbitrage Trade

In the trading strategy of credit arbitrage, I still choose to long F and short NVDA, because according to market performance and credit rating, .F's credit rating has a potential upward trend, and NVDA's credit rating has a potential downward trend. An 83% amount of F and a 17% amount of NVDA would result in a portfolio return of 21.56%.

Table 4: Trade based on credit arbitrage strategies for F and NVDA.

Symbol	Quantity	Weight	Price Paid	Last Price	P/L	%	Total P/L	Total %
F	500	83%	13.18	15.03	925.00	14.04%	5258.00	21.56%
NVDA	-100	17%	177.98	134.65	4333.00	24.35%		

Credit Rating Agencies give companies grades on their debt and their ability to pay back this debt. Industry risk has a large impact on credit ratings because the rating agencies are looking out the next few years and trying to determine if the company can survive the next recession. So, a Credit Arbitrage Trade mostly placed with investment grade (BBB or higher) and high yield (junk) bonds, we should analyze according to the long credit rating will rise and short credit rating will fall[11]. By all accounts, NVDA should have been a better investment than F. According to this trading strategy, we should be long NVDA and short F. However, due to the strong performance and attitude of executives coming in and its second quarter earnings announcement, F's rating will most likely rise; NVDA, in addition to the poor second quarter results and weak third quarter earnings guidance announced last month, has been downgraded due to signs that consumer demand for graphics processing units (GPUs) is declining, sales prices Several analysts have recently downgraded their ratings and price targets for NVDA due to signs that consumer demand for graphics processing units (GPUs) is declining, sales prices are starting to fall, and sales of some chip products are limited in China, Russia and other regions due to the epidemic and political issues. So, we should choose long F short NVDA instead of longing NVDA and shorting F. It can be seen that the credit arbitrage trade strategy is not suitable for the trading combination of F and NVDA.

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Based on the above analysis, it is easy to find that the market-neutral trading strategy can bring benefits to the F and NVDA portfolios. The long-short equity trade strategy may lead to different results according to different data analysis. Therefore, a decision should be made after comprehensive consideration of a variety of data under this strategy. The credit arbitrage trade strategy is not for this combination, because the ratings of these two stocks have a trend of change. Rather than saying that the credit arbitrage strategy should be a stock with a high rating and a stock with a low rating, it should long a stock with a upwards rating and a stock with a downgraded rating.

6. Conclusion

Different trading strategies will have different effects on the same trading portfolio, and these effects will lead people to make different choices. The three trading strategies analyzed in this article are not fully applicable in different situations. Judging from the performance of the F and NVDA combination in the past two months, the market neutral strategy is not only applicable, but if the quantity proportion is calculated according to the formula, it can even further increase the income; while the Long-short equity trade strategy is not completely applicable, based on P/E ratios and momentum strategies can bring benefits, but PEG-based strategies can lead to losses. Therefore, when using this strategy, you should consider a variety of data to make a trade-off decision; if you only make decisions based on existing credit ratings, the Credit arbitrage trade strategy is not suitable for this combination. So, when a transaction is made, the trend of the credit rating is often more important than the current credit rating. The impact of these different strategies on the same portfolio can help people make yield-enhancing decisions in today's volatile economic environment.

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