

Stock Price Analysis For Cruise Line Corporations

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GitHub URL:

https://github.com/Kookiecath/Cruise-lines/blob/main/cruiseline_stockprice.ipynb

1 Qualitative Analysis - Junting Liu

1.1 Cruise Industry Overview:

Cruise ship is a large passenger ship which is set on the sea and sails regularly. The development of the cruise industry can be divided into three periods: the period of cross ocean passenger transport, the period of cruise booming, and the period of super giant ship. With the emergence of jet airliner, ocean liner gradually lost its competitiveness of carrying passengers and cargo due to its slow speed and long time consumption, and gradually evolved into a cruise only for recreation, providing leisure and comfortable marine entertainment services for guests with rich life and leisure time.

At present, the two major cruise companies in the world are Carnival Cruise and Star Cruise, whose main market is in the Asia Pacific region (Star Cruise is an unlisted company, this paper only analyzes Norwegian cruise which is controlled by Star Cruise). After years of fierce competition, the international cruise market has shown a trend of refinement. In addition to the three popular routes in the Caribbean, Mediterranean and Asia Pacific, many new routes have been opened up, such as the Baltic Sea, Central America, South Africa, India and the Middle East cruise, Alaska glacier tour, Antarctic Tour, etc. In addition, companies such as Viking cruise and UNIWORLD cruise have opened up a number of inland river boutique tourism routes in China, Egypt, Europe and other places, and the development of cruise is in the ascendant.

As of 2018, the global cruise market has been growing. In 2017, the global cruise market reached 26.9 million person times, an increase of 4.5% compared with 24.7 million person times in 2016. From 2007 to 2017, the number of passengers in the cruise market increased from 15.6 million to 25.8 million, an increase of 64.6%. According to the report released by CLIA, 26.9 million passengers are expected to take cruise in 2018, which will continue to grow.

1.1.1 Two Cruise Line Corporations:

Norwegian Cruise Line Holdings Ltd. Norwegian group, namely Norwegian Cruise Company, belongs to Star Cruise group, or NCLC for short. Founded in Miami in 1966 by Klostors rederi A / s of Oslo, Norway. It operates three brands: Norwegian Cruise Line, Oceania cruises and Regent Seven Seas Cruises. It has 23 cruise ships in service; The routes cover North and South America, Hawaii, the Caribbean, Alaska, Europe, the Mediterranean and Bermuda, controlling about 9.4% of the global cruise market. The main customers are the middle class, and the customer base is concentrated in the United States and Canada. In 2016, it officially entered the Chinese market and changed its name to " Norwegian cruise".

Norwegian started operation in Miami in 1966. In February 2000, Genting Hong Kong acquired a controlling stake in Norwegian. In January 2008, Apollo's shareholders acquired 50% of NCLC's issued common stock capital. Apollo shareholders took over the board of directors of NCLC. Meanwhile, in January 2008, TPG Viking fund V acquired 12.5% of NCLC's issued share capital from Apollo shareholders. On January 18, 2013, Norwegian was listed on Nasdaq, with IPO Financing of US \$446.5 million, among which the main Underwriters were UBS group 6 and Barclays Bank. As of June 30, 2014, Apollo held 20% of the shares of Norwegian cruise, while Star Cruises of cloud top Group owned 28% of the shares of Norwegian cruise; In September 2014, Norwegian Cruise acquired prestige cruise holdings, the parent company of Oceania cruises and Regent Seven Seas Cruises, with a total cash and stock value of US \$3.025 billion.

Carnival Corporation PLC. Founded in Panama in 1972 and headquartered in Miami, Florida, USA, Carnival group is the largest leisure tourism company in the world and the most profitable and economically powerful company in cruise and holiday industry. Listed in the United States and the United States, it has 11 cruise brands. It is the first lady cruise operator in the world, with a market share of 41.8%. It has nearly half of the world's cruise customers and a leading supplier of the world's major cruise destinations. It operates more than 100 cruise ships in North America, Europe, Australia and Asia.

1.2 SWOT analysis of cruise industry

1.2.1 Strengths

Market demand advantage According to the survey report on tourists' willingness to travel after the epidemic, which was jointly completed by Aiwei, China Kanghui tourism group and Asia Pacific Tourism Association, 60% of the tourists said that if the epidemic was effectively controlled, they would consider traveling this year, 27% of the tourists held a wait-and-see attitude, and only 13% of the tourists said that they would not consider traveling this year. The willingness of tourists to travel is obvious. According to cruise compete, the online cruise market booking website, the volume of cruise booking business in 2021 will increase by 40% compared with that in 2019. In history, many large-scale health, public security and other emergencies have repeatedly proved that the tourism industry has the characteristics of high elasticity, strong rebound ability, and cross domain economic activities. The cruise industry involves transportation, catering, accommodation, manufacturing, travel agencies and a series of upstream and downstream industrial supply chains. The resumption of cruise can lead to a broader economic and social recovery.

Marketing advantage In the post epidemic era, the recovery of the cruise industry depends on the global epidemic prevention and control situation and the restoration of public confidence. Cruise epidemic prevention and control means include public health management on cruise ship and isolation facilities and material reserve construction of cruise home port. In this epidemic, in sharp contrast to the "Diamond Princess" cruise ship, the tourists on the "Costa Selenia" cruise ship berthed at the cruise home port of Tianjin, China, completed the detection, evacuation, resettlement and other work within 24 hours, and finally solved the epidemic crisis perfectly with zero infection performance. The response process of the whole epidemic crisis is orderly and efficient, which not only shows the good image of the Chinese government's efficient epidemic prevention, but also makes China's cruise tourism industry form a good word-of-mouth effect in dealing with the sudden epidemic, which helps cruise tourists to restore confidence and form marketing advantages.

1.2.2 Weaknesses

The complex operation mode increases the difficulty of handling public health emergencies

The outbreak of the epidemic further shows the disadvantages of the complex operation mode of international cruise, which is difficult to fight against large-scale outbreak. Take the most serious cruise ship "Diamond Princess" as an example. The ship belongs to Bermuda, the overseas territory of the United Kingdom, flies the British flag, the captain is British, the company of the cruise ship belongs to Carnival group of the United States, and the home port of the cruise ship is Yokohama port of Japan. In response to the outbreak of the cruise epidemic, the ownership of the cruise belongs to Carnival group of the United States, but it should follow the flag state law, that is, the British law. The 2666 tourists and 1045 crew members on the cruise ship come from 56 countries and regions, most of whom are Japanese. After the outbreak of the epidemic, Japan, the United States and the United Kingdom shirked their responsibilities and failed to effectively control the spread of the epidemic. It can be seen that in the face of the epidemic, the responsibility sharing and cooperation of flag state, ownership state, cruise home port, passenger source country and other parties involved in international cruise is very complex, which increases the difficulty of unified coordination and response, and reduces the efficiency and effect of epidemic prevention.

There are design deficiencies and organizational management risks in cruise ships The composition of international cruise tourists is relatively complex, with different nationalities, different ages and different cultural backgrounds. Cruise ship itself has the characteristics of relatively closed environment, large carrying capacity, high personnel density, stagnant micro-climate, limited food hygiene and medical conditions, and long sailing time. It often becomes a hotbed for the spread of acute infectious diseases, just like pathogens floating on the sea. The central air conditioning system of cruise ships, especially the internal circulation system, is more likely to become the main channel of group infection of respiratory infectious diseases. The operating routes and berthing ports of international cruise ships are located in different countries and regions, and the passengers and staff on board have different nationalities, which creates conditions for the international spread of infectious diseases and increases the

risk of various public health events on cruise ships. In addition, the routine vaccination rate of the crew from non developed countries is low, and they may carry pathogens of some related infectious diseases.

1.2.3 Opportunities

Great business growth potential Generation X is considered to be a generation of individualism and freedom of thought. This coincides with the theme of cruise "freestyle"; Generation Y will show great interest in going to Europe, and cruise ships have the advantage of providing good services for these coming consumers. In addition, due to security risks in some countries and regions, consumers prefer to travel by boat, and they think cruise is safer and more reliable than direct overseas travel. With the improvement of living standards, cruise vacation has also increased. People are more inclined to travel with their families than decades ago, and cruise just provides convenience for family travel.

Increasingly perfect service facilities Cruise travel is becoming more and more popular, attracting all kinds of service industries and entertainment facilities to join the cruise. The leisure and entertainment projects on the cruise are increasingly rich, which will attract more cruise passengers. Cruise consumers have a wide range of ages. In the past decade, although the cruise industry has made great progress, its share in the global holiday market is still very small. Especially in Europe and Asia, this provides more opportunities for cruise operators to develop these regions. Cruise industry operators can combine with the tertiary industry and take advantage of economies of scale to occupy more market share. On the whole, the cruise industry has a bright future.

Consumer disposable income increases With the development of the market economy, the disposable income of consumers is gradually increasing, and the development and prosperity of the Internet has enabled the cruise industry to develop rapidly in the technical field and also have a higher international reputation. Globalization has also brought more opportunities for cruise ships. The resources and market position possessed by cruise groups help to seize market opportunities and expand market share. At the same time, globalization has also reduced market access and marketing costs.

1.2.4 Threats

Affected by the macro economy The nature of the cruise industry is relatively special, especially in Europe and the United States, mostly transnational routes; it is greatly affected by the global economic situation, exchange rate interest rates, oil price services, and market political supervision. Once the physical business environment deteriorates, the cruise industry will suffer huge losses.

The threat of new entrants intensifies market competition As cruise travel is becoming more and more popular, the number of consumers traveling on cruises is increasing, and competition in the cruise industry is becoming increasingly fierce. The current development momentum of Royal Caribbean's market expansion poses a certain threat to Carnival Group, and as the market continues to grow With further development, competition in the cruise industry will intensify. In this regard, the cruise group can use social media and electronic platforms to attract more consumers with price and brand service advantages.

Cruise tourism employees are facing loss The entry barriers for cruise tourism are relatively high, and practitioners often need to have vocational skills and strong psychological adaptability. Affected by the epidemic, cruise companies often resort to layoffs and salary cuts to reduce costs. Although the economic pressure on cruise companies can be relieved in the short term, cruise employees are faced with survival pressure or forced to change careers. From the perspective of the long-term development trend of the cruise industry, cruise companies will face development difficulties caused by the loss of talents in the future.

1.3 Norwegian Group Strategic Analysis

Norwegian Cruise Line is the cruise operating company with the lowest market share among the two listed cruise companies, operating the three brands of Norwegian Cruise Line, Oceania Cruise Line and Regent Seven Seas Cruise Line. Through data integration analysis, it is found that Norway's development has the following characteristics.

1.3.1 Focus on brand experience and innovation

Norwegian Cruise Line focuses on brand experience in its business model, and advocates providing customers with an unfettered experience in terms of catering, cabin selection and dressing. Combine all the wonderful elements of tourism with the leisurely and luxurious style of resort-style. In addition, Norway is also an innovation-focused enterprise, with many firsts in the cruise industry. For example: allowing passengers to freely choose restaurants, the first to tailor sea trips for children, the first to provide diving equipment and courses, the first to use mobile phones on the boat; Internet cafes, bowling alleys, greenhouse gardens, and game consoles are all made by Norway was the first to move to a cruise ship.

1.3.2 Clear positioning

Every Norwegian Cruise brand has a clear market positioning, which is suitable for young people who experience cruise for the first time, as well as young couples, singles, teenagers and children who experience sea travel for the first time. It attracts young tourists with its unrestrained free style, medium and low-end consumption level, relaxed and pleasant tourism atmosphere, colorful and modern cruise decoration style. Through this way to expand market share and develop a variety of niche markets, the characteristics of the three cruise brands in Norway are as follows.

(1) Norwegian Cruise Line is a wholly-owned subsidiary of Norwegian Group, headquartered in Miami, with 17 cruise ships sailing to more than 300 destinations around the world. The characteristic of Norwegian Cruise Line is the free-style cruise service. During the cruise, passengers can arrange seats and dine at any time without wearing a formal dress.

(2) Oceania Cruises is also a wholly-owned subsidiary of the Norwegian Group. It is headquartered in Miami. It has six cruise ships that sail around the world. They usually provide voyages lasting 10 to 14 days. It is the world's leading food and beverage company. Destination-centric cruise company. The six private luxury boats on the route can accommodate 684 or 1,250 guests, providing passengers with an unparalleled holiday experience, including the best food at sea and a rich itinerary to destinations all over the world. It includes a voyage carefully crafted by designers, covering more than 450 ports in Europe, Alaska, Asia, Africa, Australia, New Zealand, New England-Canada, Bermuda, the Caribbean, Panama Canal, Tahiti and the South Pacific for 180 days Voyage around the world.

(3) Regent Seven Seas Cruises is a luxury cruise brand headquartered in Miami. In 2014, it became a wholly-owned subsidiary of the Norwegian Group. Sailing to more than 450 destinations around the world, a sixth new ship will be added in 2023. As a leading luxury sea cruise company, Regent Cruises includes many luxurious facilities, such as all-suite accommodation, business class round-trip air tickets for intercontinental flights to and from the United States and Canada, free unlimited coastal excursions, entertainment, wireless Internet access.

1.3.3 Actively expand routes

Norwegian Cruise Line has a wide range of routes, covering Alaska, Canada, the Caribbean, the Mediterranean and Northern Europe, Hawaii, Mexico, the Bahamas and Florida, South America, Naama Canal, Bermuda, Pacific Ocean and other distinctive destinations. Among them, for the Hawaii route, Norwegian Cruise Line is the only cruise brand in the United States that can provide a year-round Hawaii vacation. Based in Honolulu, specializing in operating Hawaiian routes, you can easily visit the four major islands of Hawaii (Oahu, the Big Island of Hawaii, Maui, and Kauai). On the way to Maui at night, the cruise ship passed near the lava of the Big Island volcano. Passengers can enjoy the scene of the hot lava leaping on the sea. This kind of spectacle can only be witnessed by a cruise ship.

Norwegian Cruise Line's cruise ships are basically under 100,000 tons, but since the 153,000-ton Norwegian Epic was commissioned in 2010, Norwegian Cruise Line has also begun to move towards the ranks of giant ships, and has now developed into a fleet of 14 ships with five ships. The star-rated luxury cruise ship brand has become one of the most well-known fleets in North America.

1.3.4 Low market share

In addition to the above advantages, Norway's disadvantages mainly come from two aspects: low market share and fierce market competition. First of all, the Norwegian Group's ability to develop new markets is weak. In 2017, Norwegian Joy, the most innovative ship of the Norwegian Group, entered the Chinese market as the world's fourth largest cruise ship. However, this cruise ship specially designed for China was officially launched in April 2019.

Withdraw from the Chinese market and switch to serving the Alaska market. The main reason for all of this is that the Norwegian Group did not fully conduct market research in the process of developing new markets, understand consumer characteristics, unreasonable market pricing, and improperly designed business plans. It can be seen from this that Norwegian Cruise Line is relatively weak in operating capacity in the process of developing new markets. In the future, we cannot simply consider market growth potential. We need to truly understand consumer preferences and fully conduct market research in order to make correct business strategies. Secondly, the cruise market is highly competitive; at present, compared with Carnival Group, Norway's competitive advantage is not obvious, no matter in terms of fleet size, route distribution or market share, the competitiveness is weak. Norway is mainly concentrated in the Western market, and the development of the Chinese market ultimately ended in failure.

1.3.5 Conclusion

On the whole, Norwegian Cruise Line focuses on brand building and innovative development, positioning its target customers as consumers who experience cruises for the first time. It shows that the development strategy of the Norwegian Group is mainly based on the existing market and products to "hold the ground". Trying to solve the problem of low market share through more powerful marketing methods, first by conquering the existing market, and then by increasing the size of the cruise fleet and improving the quality of service to attract more consumers. Under the premise of a wide range of routes, the development of niche services such as annual Hawaii vacations will gradually expand the market share. In addition, the Norwegian Group focuses on the construction of luxury cruise ships. The main purpose is to maintain market share. In the face of the ever-growing cruise market, it is relatively easy for companies like Norwegian Group with a small market share to improve product quality and increase market share. Reach the goal of expanding market share quickly.

Therefore, its main development strategy is market penetration. When the cruise market is growing, adopting the development strategy of market penetration can achieve the goal of grabbing market share at a faster rate.

1.4 Carnival Group Strategic Analysis

Carnival Group is the world's largest cruise company with operations in North America, Europe, Australia and Asia. It operates more than 100 cruise ships and sells cruise products, services and vacation experiences worldwide. Carnival Cruise Line takes "Fun Ship" as its main service purpose, and its development has the following characteristics.

1.4.1 There are many cruise brands

Carnival Group stated in its financial report that "we are the world's largest leisure travel company, and one of the most profitable and economically powerful companies in the cruise and vacation industry." Carnival is listed in the United Kingdom and the United States. Through continuous mergers and acquisitions, it has a total of 11 cruise brands. "

1 AIDA Cruises is a German cruise company located in Rostock, Germany. It entered the cruise industry in 1960. It was acquired by PO Princess Cruises in 2000. In 2003, PO Princess Cruises merged with Carnival Corporation to become the world's largest cruise company, Carnival Group. Aida Cruises is mainly engaged in the German market. Its unique and pure German design, colorful environment, delicious food, fascinating entertainment and considerate service provide tourists with beautiful and unforgettable sea vacations.

2 Carnival Cruise Lines is the most popular cruise brand in North America, operating 25 cruise ships, and its service tenet is to create a particularly interesting and unforgettable vacation experience with excellent value. Suitable for young people, whose main consumer is American working class.

3 Italy's Costa Cruises was established in 1854 and its headquarter is in Genoa. Carnival Group finally completed the acquisition of the controlling shares of Costa Cruises through equity acquisition. Costa Cruises is authorized to become the world's first international cruise company to conduct localized business in China.

4 Cunard Cruise Line was established in 1840 and successively launched 180 cruise ships. It is the second company to enter the cruise industry, second only to PO Cruises, acquired by the British branch of Carnival Cruises in 1998, is Cunard for travelers who like the company's flawless white star service, exquisite dining, complex adventures, long-established voyages and transatlantic travel The epitome of British elegance.

5 Holland America Line was founded in Rotterdam, the Netherlands in 1981, and was wholly-owned by Carnival Cruise Line in 1989. It is one of the main components of Carnival Group, headquartered in Seattle, USA. With a high-quality fleet of 15 spacious and elegant medium-sized ships, there are exquisite five-star dining, extensive entertainment and activities, innovative cuisine, rich courses and eye-catching global itineraries on board. Generally speaking, its programs pay more attention to cultural taste and are more suitable for the elderly. In addition, Holland America Cruises also has a group of unparalleled employees who provide passengers with meticulous service, friendly smiles and considerate care to attract loyal customers.

6 Ibero Cruises is a Spanish cruise company established in 2007. With the rapid transformation of the shipping industry and the rapid development of the cruise industry, the world's largest cruise group company Carnival will jointly develop the growing Spanish cruise market. At present, Ibero Cruises mainly provides routes from Spain to Europe, the Mediterranean and the Caribbean. At the beginning of Ibero's establishment, Carnival accounted for 75%, and Oriental Group accounted for the remaining 25%. In May 2009, Oriental Group officially withdrew from Ibero Cruises. Carnival is currently the wholly-owned parent company of Ibero Cruises.

Ibero and Costa and Aida Cruises jointly provide services for the European market. Compared with Aida and Costa, Ibero pays more attention to the development of the initial stage of the market. Therefore, Ibero's target market is mainly low-end markets with relatively low prices. Inexpensive and expect to attract young people to experience the ranks of cruise vacations, this market strategy is limited to the Spanish-speaking market. Ibero's four active cruise ships are all second-hand cruise ships with a long history, and most of them have sea view or interior view rooms without the balcony design of modern cruise ships. In addition, all Ibero ships are registered on the Portuguese Atlantic island of Madeira and maintain EU status.

7 PO Cruises UK is a pioneer in the global cruise industry. In 2000, PO Cruises UK became independent from PO Cruises and became a subsidiary of PO Princess Cruises. In 2003, it merged into Carnival Cruises Group. It has a fleet of seven ships, and the new ship Britannia was launched in March 2015. The service tenet of the fleet is: combining sincere service, paying attention to details and sense of occasion; ensuring that passengers have an unforgettable vacation every time.

8 Ocean Village was founded by PO Princess in 2003. After bankruptcy in 2010, its cruise ship was resold to PO Cruises Australia.

9 PO Cruises Australia was established in Australia in 1932. It is part of the American Carnival Cruises Group. It is managed by Holland America Cruises and mainly serves the Australia and New Zealand markets. Its business purpose is to provide Australians and New Zealanders with an idyllic, poetic and distant holiday experience, with routes across Asia and the South Pacific.

10 Princess Cruises, founded in 1965, is headquartered in Los Angeles, USA. At present, there are 18 world-class cruise ships with voyages on seven continents and visits to more than 270 ports. Based on passenger flow, the company's ships are known for their innovative designs and wide selection of dining, entertainment and facilities. It constantly updates and improves facilities and equipment, and provides diversified services, so that tourists can choose activities that suit them according to their preferences on board.

11 Seabourn Cruise Line is one of the most high-end brands in the Carnival Group. It provides ultra-luxury cruise vacations with a unique boat type, focusing on authentic and intuitive services, all-suite accommodation, first-class cuisine and global purpose. The unique experience of the land, the ratio of service personnel and tourists on board is as high as 1:1.

1.4.2 Accurate market and brand positioning

As the world's number one cruise company, although Carnival Group has many cruise brands, it still maintains an accurate market and brand positioning. Its parent company takes joy as its theme, and its sub-brands retain their own characteristics. The specific market positioning of the company is shown in the table.

Types of cruise ships	Passenger capacity	Number of cruise ships	Major markets
AIDA Cruises	30212	13	Germany
Carnival Cruise Lines	69890	26	North America
Costa Cruises	34847	14	Italy, France
Cunard Line	6721	3	UK and North America
Holland America Line	26022	15	North America
Ibero Cruises	4176	3	Spain and South America
P&O Cruises UK	17311	7	UK
Ocean Village	--	--	--
P&O Cruises Australia	7710	5	Australia
Princess Cruises	45180	17	North America
Seabourn Cruise Line	1974	6	North America

Figure 1: Market positioning details of carnival group's cruise subsidiary

1.4.3 Group management

Carnival is conducive to cost control through group and unified operation and management. The heads of the various brands of the Carnival Group are uniformly selected by the headquarters, and they are basically recruited and selected in the regions where the subsidiaries are located. Compared with the managers in other places, the local personnel are more aware of the market environment of the cruise brand. Familiar with. In terms of the design and construction of new cruise ships, Carnival Group also implements standardized management and controls costs through group-based joint procurement. In product sales and marketing, Carnival Group adopts a unified online booking, allowing consumers to screen their favorite cruise brands, destinations and specific routes online. In general, Carnival's group business model is conducive to controlling costs and maintaining profitability.

1.4.4 Low customer satisfaction and uneven distribution of company resources

Although Carnival's market share is the largest in the world and its demand for cruise products has not declined, Carnival Group's cruise ship dissatisfaction rate is much higher than the other two due to its large fleet. It is reflected in comments on various online platforms, indicating that Carnival should focus on improving customer experience. The competition for resource allocation among various departments of the Carnival may affect future growth, leading to missed market opportunities.

1.5 Conclusion for qualitative analysis:

In the face of fierce competition in the cruise industry, significant economies of scale and growth potential, Carnival Group has 11 cruise fleets of different styles through corporate acquisitions, mergers, or joint operations with strong capital and human resources, which are horizontally integrated. Development strategy. Adopt an integrated strategy to reduce the pressure of competition, achieve economies of scale while enhancing its own strength, and obtain a certain monopoly position in some areas.

2 Quantitative Analysis - Catherine Song

2.1 Introduction:

From the quantitative perspective, I analyzed the stock performance of two cruise line corporations: Norwegian Cruise Line and Carnival Cruise Line. I analyzed their time series data since IPO, their moving average, volatility, Sharpe ratio, ETFs and their comparison to the Nasdaq Index. I also analyzed their performance before and during the COVID-19 pandemic, and made prediction for the near future. Although they both suffered from the huge negative impact of COVID-19 pandemic in the first three months of 2020, we could see the stock prices began to resume thereafter.

2.2 Norwegian Cruise Line

Norwegian Cruise Line Holdings Ltd. engages in the provision of cruise travel services. It provides cruise experiences for travelers with itineraries in North America, Mediterranean, Baltic, Central America, Bermuda and Caribbean. It also offers an entirely inter-island itinerary in Hawaii. Its brands include Norwegian Cruise Line, Oceania Cruises, and Regent Seven Seas Cruises. The company was founded in 1966 and is headquartered in Miami, FL. Gina Cruise Line Holdings Ltd. engages in the provision of cruise travel services. It provides cruise experiences for travelers with itineraries in North America, Mediterranean, Baltic, Central America, Bermuda and Caribbean. It also offers an entirely inter-island itinerary in Hawaii. Its brands include Norwegian Cruise Line, Oceania Cruises, and Regent Seven Seas Cruises. The company was founded in 1966 and is headquartered in Miami, FL.



Figure 2: Norwegian Cruise Line

2.2.1 Company Valuation:

Norwegian Cruise Line priced shares of its initial public offering at \$19 per share on Jan.17.2013, and when it opened next day, the stock soared to over \$25. This Miami-based cruise company were priced at \$19 a share, which was a strong reception from investors. The deal raised \$447 million for the company in IPO and sold 23.52 million shares.

Table 1: Company valuation at IPO

Ticker	IPO Share Price	Amount of Shares	Raised Capital	Growth at IPO	Enterprise Value
NCLH	\$19 per share	23.52 Million	\$447 Million	30.47%	\$6.4 Million

Table 2: Current Valuation on July 1, 2021

Current Share Price	Shares Outstanding	Revenue	Gross Profit	Enterprise Value	Market Cap
\$29.51 per share	369.93 Million	\$36.13 Million	\$-413.15 Million	\$19.41 Billion	\$10.69 Billion

Table 3: Statistics from January 17, 2013 to July 1, 2021

Highest Price	Lowest Price	Average Price
\$63.76 per share	\$7.77 per share	\$42.374 per share

2.2.2 Time Series Plot for NCLH:



Figure 3: Adjusted Close Price of NCLH

As can be seen in the line plot, the stock price (adjusted close price) for Norwegian Cruise Line was relatively stable for the first two years since its IPO. Then it soared to its highest point of \$63.76 per share. After the spike, there came the drop. Later on, it experienced some fluctuations ranging from \$35 to \$60 per share. By the end of the year 2019, it climbed to \$60 per share, which was pretty close to its peak. But unfortunately, the COVID-19 pandemic broke out. In the first three months of 2020, NCLH suffered a devastating drop from \$60 per share to its unprecedented lowest point of \$7.77 per share. The price has been recovering since then. It's raising gradually. The current stock price is about \$30 per share. If no other major discouragement happens, we can almost expect a new high in the near future.

2.2.3 Moving Average (Rolling Mean) for NCLH:

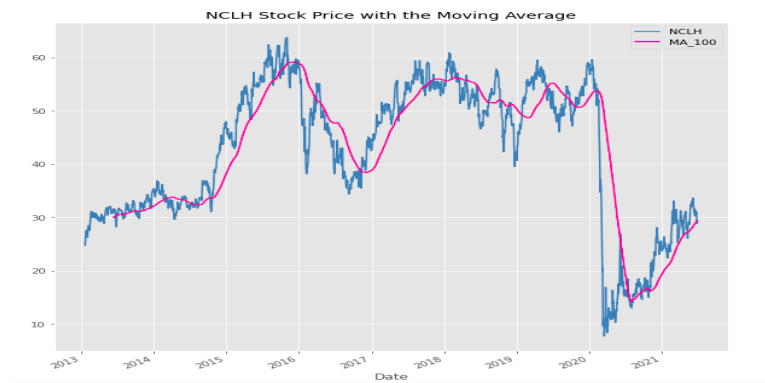


Figure 4: Moving Average line of NCLH

The moving average (Rolling mean) smooths out price data by creating a constantly updated average price. It cuts down "noise" in our price chart and provides us a moving trend of stocks. We could expect it will follow the trend and less likely to deviate outside its resistance point.

In this chart, the moving average showcases an increasing trend after experiencing the devastating drop due to the COVID-19 pandemic. Starting from March 2020 till now, the pink line displays a positive linear trend and has a deep slope. It means that the stock price is increasing drastically and will continue to climb in the short near future.

2.2.4 Return rate:

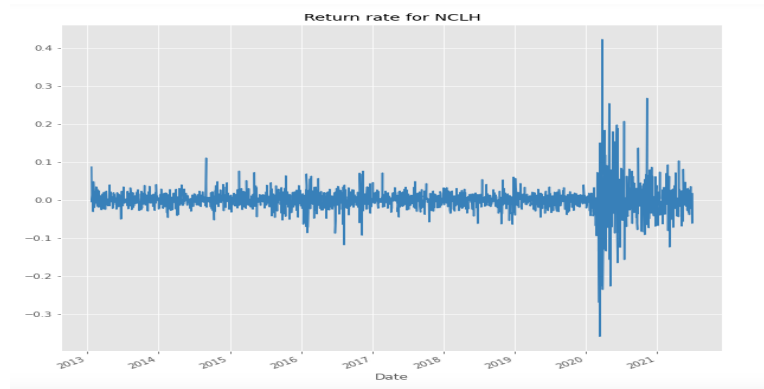


Figure 5: Return Rate of NCLH

The return rate measures the expected value of the probability distribution of investment returns. We use it to determine risk and return. Logically, our ideal stock should return as high and stable as possible. However, people have different investment appetites and different sentiments for a certain stock, so the decision is really up to you.

As a risk-averse person, I would avoid this stock in early 2020 as you could see a 35% drop during this time period. Although it soon experienced a huge spike (a 40% increase), I still think it was too risky to invest due to its huge fluctuations. Now, the fluctuation is gradually subsided. Whether to buy or sell the stock, we still need to refer to other plots as well.

2.2.5 Rolling Volatility:

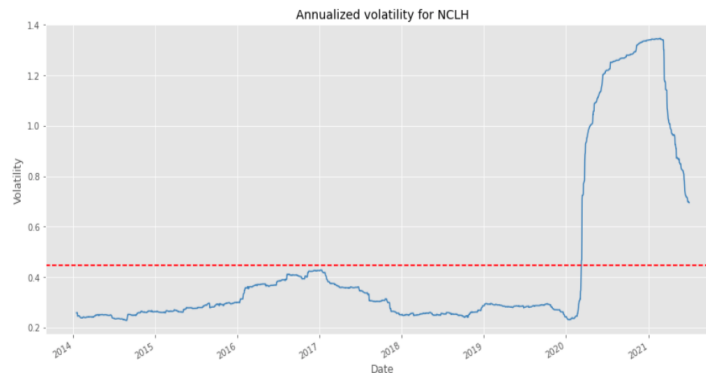


Figure 6: Rolling Volatility of NCLH

Volatility measures the dispersion of returns (degree of variability) over a certain period. It's derived from historical price data of the security over predetermined periods. Here, I used the annualized volatility which is a calculation of the standard deviation of logarithm annual returns. The red dash line represents its average volatility.

As volatility goes higher, the security goes riskier because the asset price changes dramatically and fluctuates. As shown in the plot, from the year 2020 to 2021, the annualized volatility for this security soared from 0.3 to 1.35. It far deviated from the average volatility. It means that it was highly risky for people to invest at this point. Starting from this year, volatility began to drop, and we hope it could drop below the red line.

2.2.6 Sharpe ratio:

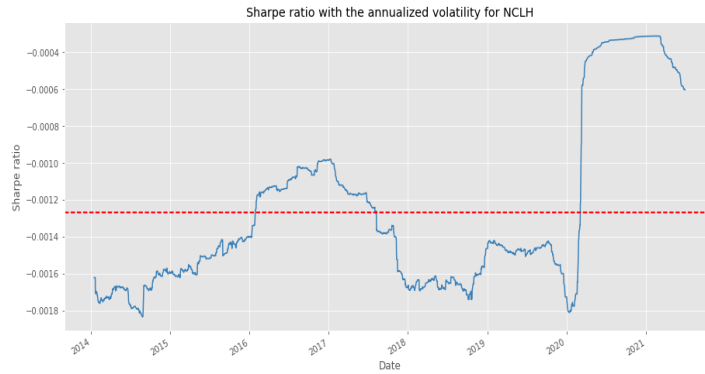


Figure 7: Sharpe Ratio of NCLH

Sharpe ratio measures the total performance of the asset. It indicates how well an equity performs in comparison to the rate of return on a risk-free investment. In other words, it tells us how much return we could achieve per each unit of risk. A value between 0 and 1 signifies that the returns derived are better than the risk-free rate.

In my calculation, I used a three month Treasury Bill rate, which was 0.05% on July 1, 2021. As the plot shows, its Sharpe ratio has always been below 0. It means that its return rate has always been below the risk-free rate.

2.2.7 ETFs Analysis for NCLH:

ETFs Hold	NCLH Shares in ETFs	Biggest Holder	Largest Allocation
95	28.6 Million	SPY	BEDZ

Norwegian Cruise Line Corporation is a holding in 95 U.S.-traded ETFs. NCLH has around 28.6M shares in the U.S. ETF market. The largest ETF holder of NCLH is the SPDR S&P 500 ETF Trust (SPY), with approximately 3.74M shares. Investors may also find of interest that the ETF with the largest allocation to NCLH stock is AdvisorShares Hotel ETF (BEDZ), with a portfolio weight of 3.22%. On average, U.S. ETFs allocate 0.18% of NCLH to their portfolios.

Additionally, NCLH is a favorite stock for Vanilla and Active ETFs. It is also most likely to belong to Broad-based ETFs. The best-performing ETF in the past 12 months with NCLH as a holding is the Direxion Daily SP 500 High Beta Bull 3X Shares (HIBL), with a return of 648.34%. (ETF.com 2021)

Ticker	Fund Name	% Allocation
BEDZ	AdvisorShares Hotel ETF	3.22%
RCD	Invesco S&P 500 Equal Weight Consumer Discre...	1.36%
SPHB	Invesco S&P 500 High Beta ETF	1.29%

((a)) ETFs with the most NCLH Exposure:

Ticker	Fund Name	Number of Shares
SPY	SPDR S&P 500 ETF Trust	3.74M
VB	Vanguard Small-Cap ETF	2.92M
IVV	iShares Core S&P 500 ETF	2.77M

((b)) ETFs with the most NCLH shares:

Ticker	Number of ETFs
Vanilla ETFs	36
Active Management ETFs	12
Value ETFs	10

((c)) Top ETF Strategies using NCLH:

2.3 Carnival Cruise Line

Carnival Cruise Line is an international cruise line with headquarters in Doral, Florida. It is a subsidiary of Carnival Corporation plc. Its logo is the funnel, like the funnels found on its ships, with red, white, and blue colors. The funnels are shaped like a whale's tail. Carnival is ranked first on the list of largest cruise lines based on passengers carried annually and total number of ships in fleet.



Figure 8: Carnival Cruise Line

2.3.1 Company Valuation:

On July 31, 1987, Carnival Crop completed its initial public offering of 20% of its common stock on the New York Exchange with a price of \$3.875 per share. It raised approximately \$400 million in capital. The capital raised was used to finance acquisitions.

Table 4: Company valuation at IPO

Ticker	IPO Share Price	Amount of Shares	Raised Capital	Growth at IPO	Enterprise Value
CCL	\$3.875 per share	20% of its common stock	Approx \$400 Million	-1.61%	\$2.11 Billion

Table 5: Current Valuation on July 1, 2021

Current Share Price	Shares Outstanding	Revenue	Gross Profit	Enterprise Value	Market Cap
\$29.51 per share	973.83 Million	\$140 Million	\$834Million	\$53.49 Billion	\$30.52 Billion

Table 6: Statistics from January 17, 2013 to July 1, 2021

Highest Price	Lowest Price	Average Price
\$66.22 per share	\$1.03 per share	\$22.83 per share

2.3.2 Time Series Plot for CCL:



Figure 9: Adjusted Close Price of CCL

As the line plot shows, the stock price for Carnival Cruise Line experienced several ups and downs. It has its first high in the late 1990s, then followed by a sudden drop from \$30 per share to \$12 per share due to the dot-com stock market crash. After that, it resumed and even surpassed the previous highest point. Later on, the 2008 financial crisis happened, CCL suffered from a huge drop. But since then, it went up steadily and reached its highest point at the price of \$66.62 per share. However, without any surprise, due to the coronavirus explosion that happened in early 2020, CCL dropped to its unprecedented low from \$50 per share to \$12.11 per share. Now, the stock price is steadily increasing, but whether it will be back to its climax, we'll have to see.

2.3.3 Moving Average (Rolling Mean) for CCL:

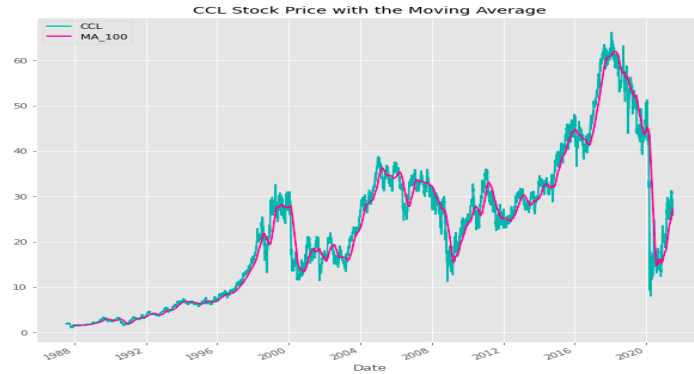


Figure 10: Moving Average line of CCL

Before the COVID-19 pandemic, in spite of two major drops that happened in the year of 2000 and 2008, CCL's general trend is increasing. When it first came to public, its share price was \$3.875 per share. And in year 2018, it reached its highest point at the price of \$66.62. It had increased 1619% in 30 years. Although it experienced downfall during COVID-19, its price is increasing drastically after that. As the positive linear moving average line indicates, it may have a new high in the near future.

2.3.4 Return rate:

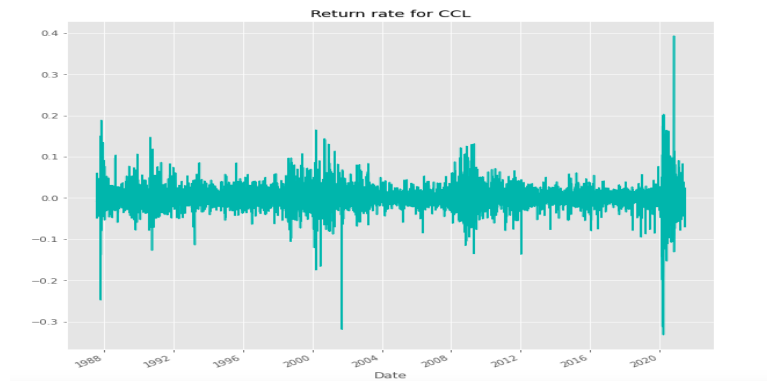


Figure 11: Return Rate of CCL

As can be seen from this plot, CCL experienced several major drops since its IPO. The most recent drop happened in early 2020 and there was a huge spike afterward. As mentioned in the previous analysis, we would like to pursue a high and stable return rate. This was not the case for this stock. It was very unstable and fluctuated drastically at this moment. But now, since we're walking out of the epidemic stage and going towards the control stage, the fluctuation of the stock price will also subside.

2.3.5 Rolling Volatility:

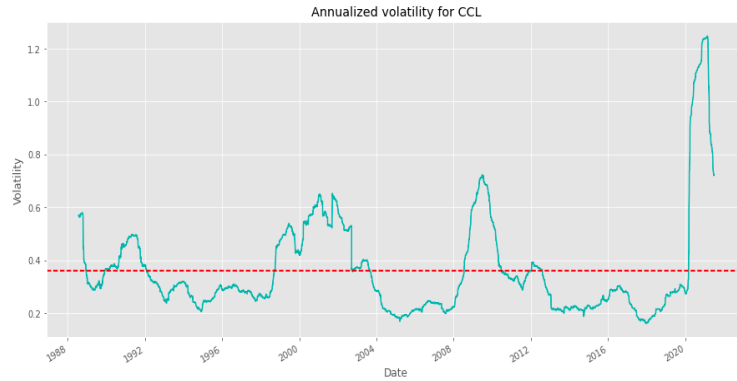


Figure 12: Rolling Volatility of CCL

As volatility goes higher, the security goes riskier because the asset price changes dramatically and fluctuates. According to this plot, from the year 2020 to 2021, the annualized volatility for this security soared from 0.3 to 1.25. It far deviated from the average volatility. It means that it was highly risky for people to invest at this point. Starting from this year, volatility began to drop, and we hope it could drop below the red line.

2.3.6 Sharpe ratio:

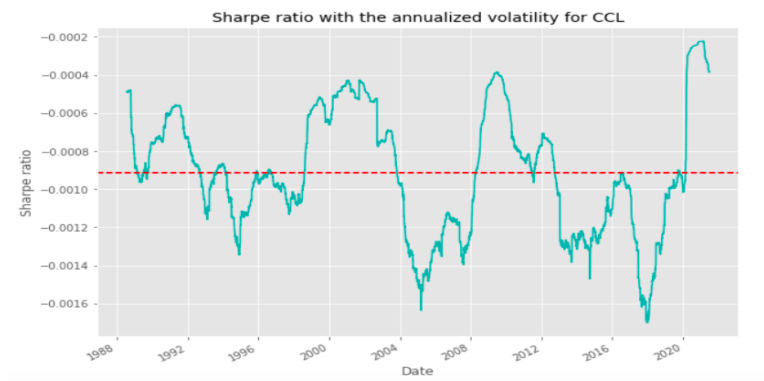


Figure 13: Sharpe Ratio of CCL

This plot shows that the Sharpe ratio for CCL has always been below 0 since its IPO. It means that its return rate has always been below the risk-free rate.

2.3.7 ETFs Analysis for CCL:

ETFs Hold	CCL Shares in ETFs	Biggest Holder	Largest Allocation
123	60.5 Million	SPY	BEDZ

Carnival Corporation is a holding in 123 U.S.-traded ETFs. CCL has around 60.5M shares in the U.S. ETF market. The largest ETF holder of CCL is the SPDR S&P 500 ETF Trust (SPY), with approximately 8.21M shares. Investors may also find of interest that the ETF with the largest allocation to CCL stock is AdvisorShares Hotel ETF (BEDZ), with a portfolio weight of 2.39%. On average, U.S. ETFs allocate 0.23% of CCL to their portfolios. In addition, the same as NCLH, CCL is a favorite stock for Vanilla and Active ETFs (ETF.com 2021).

Ticker	Fund Name	% Allocation
BEDZ	AdvisorShares Hotel ETF	2.39%
NVQ	QRAFT AI-Enhanced U.S. Next Value ETF	1.85%
SFYF	SoFi Social 50 ETF	1.75%

((a)) ETFs with the most CCL Exposure:

Ticker	Fund Name	Number of Shares	Ticker	Number of ETFs
SPY	SPDR S&P 500 ETF Trust	8.21M	Vanilla ETFs	43
IVV	iShares Core S&P 500 ETF	6.27M	Active Management ETFs	15
VO	Vanguard Mid-Cap ETF	5.86M	Value ETFs	14

((b)) ETFs with the most CCL shares:

((c)) Top ETF Strategies using CCL:

2.4 Comparison between NCLH, CCL and NDAQ

2.4.1 Historical stock performance:

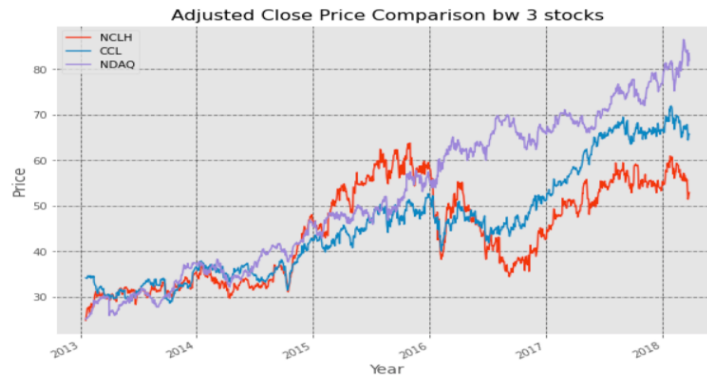


Figure 14: Adjusted Close Price comparison between 3 stocks

Since I used the Quandl platform to acquire the data set, it only available till March 27, 2018. Therefore, I could only do the analysis from 2013 to 2018. The purple line represents the Nasdaq index, which is the market capitalization-weighted index of over 2,500 common equities listed on the Nasdaq stock exchange. In other words, it represents the market.

As shown in the plot, within this time period, the Nasdaq index displays a positive linear trend. From 2013 to 2015, three stocks displayed a similar pattern. After 2015, NCLH had a better performance than the Nasdaq index, while CCL had slightly worse performance. But since 2016, both stocks performed worse than the Nasdaq index.

2.4.2 Risk and Return Comparison:

	NCLH	CCL	NDAQ
NCLH	1.000000	0.814269	0.720270
CCL	0.814269	1.000000	0.924496
NDAQ	0.720270	0.924496	1.000000

Figure 15: Correlation table

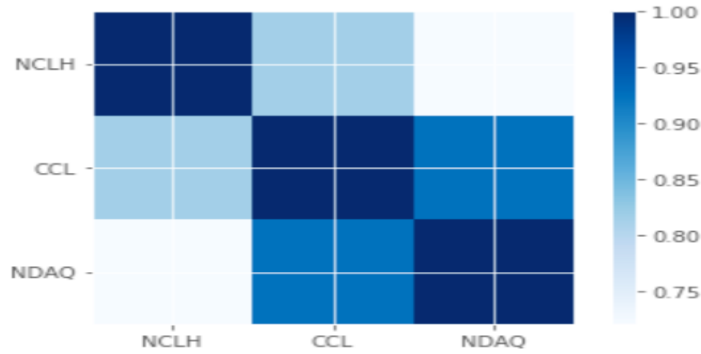


Figure 16: Correlation Map

The correlation map can indicate the linear relationship between the three stocks. The darker color means that the two stocks have a stronger linear relationship, while the lighter color means the opposite. From the correlation table, we can know that the correlation between NCLH and CCL is 0.814269, which means that they have a strong association. As one increases/decreases, the other one would have a similar impact. Additionally, we can know that compared to the relationship between CCL and NDAQ, NCLH has a stronger linear relationship with NDAQ. It indicates that when the Nasdaq index changes, NCLH suffers more than CCL. But generally speaking, both stocks have a pretty close association with the Nasdaq since both correlations are above 0.5.

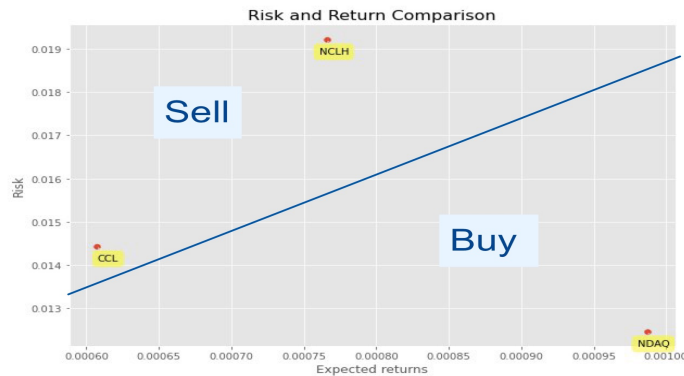


Figure 17: Risk return comparison

In this scatter plot, I put the expected return of the stock on the X-axis, the Risk rate on the Y-axis, and put labels on each of the stocks. It clearly displays the expected return and the risk of every stock. Usually, an ideal stock has a low-risk rate and high expected returns since we would like to minimize the risk and maximize the return. In addition, we could draw a linear line on the plot based on our investment appetite and risk tolerance. We could create our own rules to buy the stocks below the line and sell the stocks above the line. This line showcases the expected value threshold and the baseline for our buy/sell decision.

2.4.3 Volatility Comparison:

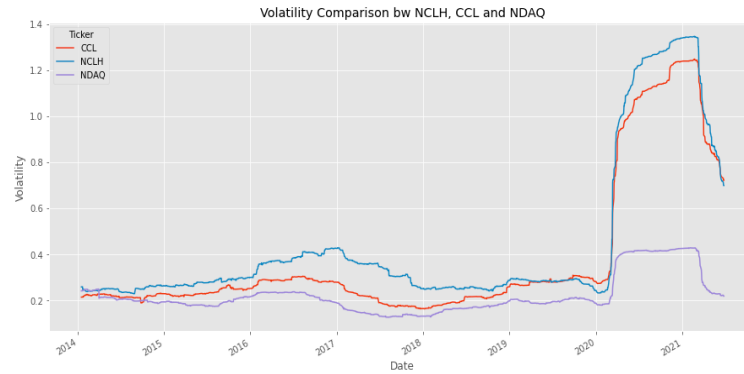


Figure 18: Volatility comparison between 3 stocks

As can be seen from the plot, the volatility of the Nasdaq index is the most stable and remains the lowest among the three stocks. Since it represents 2,500 common equities on the Nasdaq stock exchange, we expect it to be stable and lower than an individual stock. When the pandemic came in early 2020, the stock market was all negatively impacted. The volatility for the Nasdaq index increased from 0.2 to 0.4, while the volatility for the other two stocks soared from 0.3 to above 1.25. Starting from this year, volatility for both stocks began to drop and we expect them to get closer to the purple line.

2.4.4 Sharpe Ratio Comparison:

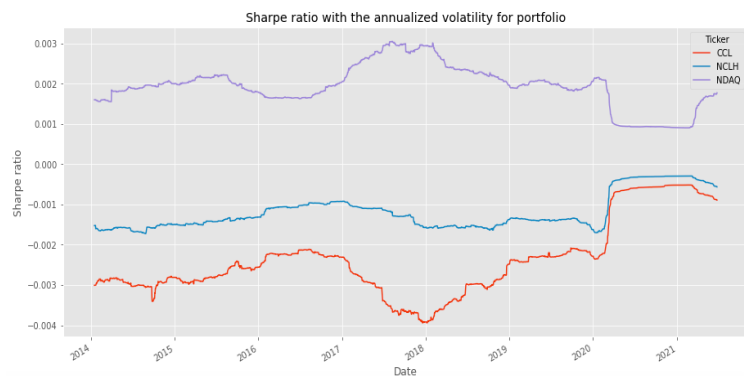


Figure 19: Sharpe ratio comparison between 3 stocks

As the above plot shows, since 2014, the Sharpe ratio of the Nasdaq index has always been above 0 and the Sharpe ratio of the other two stocks has always been below 0. It means that the return rate for the Nasdaq index is higher than the risk-free rate, while the return rate for the other two stocks is lower.

In other words, investing in the stock market, you may get higher return than investing a risk-free treasury bill. However, if you pick the stocks whose Sharpe ratio is always below 0, then you'd better invest a risk-free treasury bill to avoid losing money. Be careful when picking stocks and do your research!!!

2.5 Prediction for the near future:

In the previous analysis, I mentioned that according to both companies' time series plots, moving average line, and other statistics, the stock price for both companies will continue to increase. However, the stock price for the whole industry might not increase as fast as we predicted.

From the companies' perspective, in order to resume operations in the United States, cruise companies will have to meet several conditions set by the CDC. In addition, there are many other regulations they have to follow. From the customers' perspective, they'll also have a lot of considerations due to safety issues. Starting from this month, Norwegian Cruise Line requires mandatory COVID-19 vaccinations for all guests and crew. Therefore, the booking demand will not recover so soon. It really depends on the current situation of the COVID-19.

From either perspective, the recovery of the cruise industry is likely to be a long haul.

3 Overall Conclusion:

From the perspective of development strategy, the Norwegian Group has a clear positioning, focusing on consumer experience, brand experience and product innovation. Use advertising to open up sales channels, capture the high-end consumer demand of middle-class and wealthy families, and the complex consumer demand of the new generation to attract consumers, consolidate the market through innovative concepts, and expand the demand for the mid-to-high-end cruise market with brand experience. In terms of products, improve the quality of cruise services, develop high-quality cruise tourism, and increase the construction of new ships to enrich the supply. In terms of personnel management, we focus on helping employees adapt to the new product market. At this stage, its core competitiveness is to gain market share, win the trust of consumers, and gain a foothold in the industry. The penetration development strategy helps Norwegian focus on investment in research and development, improving cruise service quality, increasing sales share, and gaining the trust of consumers while increasing market share.

In the future, Carnival Cruise Line needs to maintain and upgrade its existing products and services to consolidate its current market share and continue its development strategy of horizontal integration. In terms of production and operation, it focuses on strengthening the relationship with consumers, making full use of the numerous advantages of the brand to attract different consumers, and establishing a good relationship with passengers to improve customer satisfaction. Cooperate with the unified management of the group, establish a complete organizational structure system to further reduce costs. In terms of personnel management, the main goal is to improve employee efficiency. In addition, due to the low customer satisfaction of the Carnival Group, the Carnival Group also needs to strengthen customer satisfaction research and improve customer satisfaction and improve its corporate brand culture. At this stage, the core of the cruise company's development is the improvement of production efficiency and product functions, and the strengthening of new product development.

From an investment perspective, according to the above analysis, we found that although the stock prices of Norwegian Cruise Line and Carnival Cruise Line had sustained growth and peak points before the outbreak of COVID-19 in 2020. However, from the stock listing to the current post-epidemic era, the stocks of the two companies have always had problems with high volatility, high risks, and low return on investment. These problems became more obvious after the outbreak of COVID-19.

We agree with the efforts of these two companies in terms of corporate brand development and corporate life cycle positioning and we also believe that the operating conditions of the two companies will recover after the epidemic. In addition, the cruise industry and cruise economy will gradually form a good circle with the increase in consumer demand and the restoration of market confidence. But it also need to take a long time to reach it. Therefore, as the entire cruise industry has not completely escaped the impact of the epidemic and the number of people infected with the COVID-19 mutant virus is still increasing, we believe that we should remain cautious about investment in the cruise industry. High-risk events such as the volatile global political and economic situation, intensified trade wars between countries, fierce market competition and uncertainty in epidemic control will all lead to violent fluctuations in cruise stock prices, resulting in huge losses for investors. Therefore, individual investors or customers with short-term investment should maintain a wait-and-see attitude towards cruise stocks. Large institutions or mid- to long-term investors should also do a good job of risk management and hedging while investing in the cruise industry.

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