

TERM PAPER

INVESTMENT

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I. Investment Performance

Income	Status	Period	Tax bracket
\$100,000.00	Single	Short term	24%

Date	Stock	Buy/Sell	Price (\$)	Quantity	Transaction Costs (TC) (\$) <i>Capital gain tax</i>	Profit after TC	Profit after TC (%)	Cumulative Profit after TC (\$)	Cumulative Profit after TC (%)
14/3/2023	AAPL	Buy	152.56	148	3.37	670.55	9.16		
4/4/2023		Sell	166.6	48					
14/3/2023	AAPL	Buy	152.56	148	4.74	983.76	12.90		
9/5/2023		Sell	172.33	50					
								1654.31	11.06
11/4/2023	NFLX	Buy	340.15	100	16.5192	3424.98	20.14		
8/6/2023		Sell	408.98	50					
11/4/2023	NFLX	Buy	340.15	100	16.09	1659.66	19.52		
9/5/2023		Sell	407.18	25					
								5084.64	19.63
21/3/2023	GOLD	Buy	17.62	50	0.12	-5.02	-2.85		
21/3/2023		Buy	17.13	10					
9/5/2023	DIS	Buy	102.61	50	2.55	-108.65	-10.59		
9/6/2023		Sell	92	10					
14/3/2023	UNP	Buy	197.05	100	0.76	156.74	1.59		
9/6/2023		Sell	200.2	50					

II. Investment Vehicle – Stocks

- Potential for High Returns: Stocks with long-term growth potential might increase in value as the business expands and becomes more lucrative. Besides, some stocks pay regular dividends to shareholders and this can provide additional income and increase overall return on investment.
- High liquidity: Because of the nature of being able to easily buy and sell on financial markets, investors can easily use their own cash when needed and have the ability to take advantage of market opportunities such as buying at low prices and selling at high prices.
- Diversification: Putting money into a diverse portfolio of assets can help disperse risk and perhaps even boost profits. This can help to reduce overall portfolio volatility.
- Flexibility: Using stocks, individuals may design a portfolio that meets their unique objectives and risk tolerance. Moreover, investors can access different types of stocks and have the opportunity to invest in successful companies.

1. APPLE INC (AAPL)

Sector: Electronic Technology

Industry: Telecommunications equipment

a. Financial Performance

- Revenue¹: According to the yearly report, Apple's revenue climbed positively from \$365,817 billion in 2021 to \$394,328 billion in 2022. Strong sales of Apple products, particularly the iPhone 14 series, are responsible for this surge.
- Profit²: Apple has consistently reported high profits with net income for 2022 was \$99.803 billion, a 5.41% increase from 2021. The report notes that Apple's profit has always remained stable despite the difficult economy.
- Balance sheet³: The 2022 balance sheet shows that the company has a strong asset base (total asset: \$352,755 billion) and has substantial cash and cash equivalents providing liquidity. However, the company's financial flexibility may be constrained by its high debt-to-equity ratio (1.76) and difficulty in meeting its short-term obligations with a current ratio smaller than 1 (0.93).

b. Competitive Positioning

- Market and Industry position: Apple is currently one of the most valuable companies in the world with a market capitalization⁴ of \$2.84 trillion. The company has a reputable brand name and loyal customer base. In the market, Apple has to compete with different technology companies (Samsung, Google and Amazon). The company has maintained its position with continuous innovation and built a tight ecosystem of products and services that work in conjunction with each other. Besides, the company also develops in the service direction with outstanding services such as Apple Music, Apple TV+ and App Store. This helps diversify revenue sources and reduce the dependence on hardware business.

¹ [Apple Revenue 2010-2023 | AAPL | MacroTrends](#)

² [Apple Net Income 2010-2023 | AAPL | MacroTrends](#)

³ [Apple Balance Sheet 2009-2023 | AAPL | MacroTrends](#)

⁴ [Apple Inc. \(AAPL\) Stock Price, News, Quote & History - Yahoo Finance](#)

c. Valuation Metrics (At the end of 2022)

- Price-to-Earnings (P/E) Ratio⁵ (22): high ratio. It can explain investors' expectations for higher earnings growth from Apple in the future.
- Price-to-Sales (P/S) Ratio⁶ (5.42): quite high compared to the market average. Apple is capable of achieving high gross margins and a high competitive advantage.
- Price-to-Book (P/B) Ratio⁷ (36.18): high ratio. It can understand that the market is expecting Apple to have a good future and investors are willing to pay more for book value

d. Risk and Potential return

- Beta in 2023⁸ is 1.3. This shows that Apple's stock price volatility is higher than the market and has high profit potential. However, the possible risk is also quite large.
- Risk: Although Apple is a well-established company, it still faces a few risks such as changing consumer preferences, economic downturn, regulatory changes and competition from other technology companies.
- Potential return: Apple has a history of great stock market performance, with steady revenue growth and profitability. The company also has a strong brand reputation and a loyal customer base, which could support future growth.

2. UNION PACIFIC CORPORATION (UNP)

Sector: Transportation

Industry: Railroads

a. Financial Performance

- Revenue⁹: The financial statements for the past 2 years have recorded a recovery in the company's revenue after the covid-19 pandemic when the revenue in 2021 was \$21,804 billion, up 11.63% compared to 2020 and reached \$24,875 billion in 2022. This growth is based on the distribution and use of various transportation products and services.
- Profit¹⁰: According to the report, the UNP's net income in 2021 is \$6,523 billion. This figure represents an increase of 21.95% compared to the previous year, representing the return of growth of the transportation industry after the Covid-19 epidemic period.
- Balance sheet¹¹: The balance sheet of 2022 shows the company has a strong asset base (total asset: \$65,449 billion) with substantial investments in property, plant, and equipment (\$56,038 billion). A high debt-to-equity ratio (2.6) can affect a company's financial performance. While a low current ratio (0.72) indicates that the company may have difficulty meeting short-term obligations

b. Competitive Positioning

- Market and Industry position: Union Pacific is one of the largest railroad companies in the United States with a market capitalization¹² of \$122.543 billion. The company's position is maintained due to its large scale and a diverse customer base in many fields. In addition to

⁵ [Apple PE Ratio 2010-2023 | AAPL | MacroTrends](#)

⁶ [Apple Price to Sales Ratio 2010-2023 | AAPL | MacroTrends](#)

⁷ [Apple Price to Book Ratio 2010-2023 | AAPL | MacroTrends](#)

⁸ [Apple Inc. \(AAPL\) Stock Price, News, Quote & History - Yahoo Finance](#)

⁹ [Union Pacific Revenue 2010-2023 | UNP | MacroTrends](#)

¹⁰ [Union Pacific Net Income 2010-2023 | UNP | MacroTrends](#)

¹¹ [Union Pacific Balance Sheet 2009-2023 | UNP | MacroTrends](#)

¹² [Union Pacific Corporation \(UNP\) Stock Price, News, Quote & History - Yahoo Finance](#)

focusing on operational efficiency, the company constantly innovates technology to maintain a competitive advantage.

c. Valuation Metrics (At the end of 2022)

- Price-to-Earnings (P/E) Ratio¹³ (18.24): high ratio. It can explain investors' expectations for higher earnings growth from the company in the future.
- Price-to-Sales (P/S) Ratio¹⁴ (5.15): quite high compared to the market average.
- Price-to-Book (P/B) Ratio¹⁵ (10.29): high ratio. It can understand that the market is expecting UNP to have a good future and investors are willing to pay more for book value.

d. Risk and Potential return

- Beta in 2023¹⁶ is 1.1. This shows that UNP stocks are less volatile than the market
- Risk: potential risks that UNP may face such as changes in the economy, regulations, labor disputes and competition from other transport companies.
- Potential return: UNP has a history of great stock market performance, with a history of steady revenue and earning growth. The demand for rail transport is increasing after the recovery period from the epidemic, especially for oil and gas, chemicals and agricultural products.

3. BARRICK GOLD CORPORATION (GOLD)

Sector: Non-Energy Minerals

Industry: Precious Metals

a. Financial Performance

- Revenue¹⁷: Barrick Gold's revenue has recorded a continuous decline in the last 2 years. What happened when the US economy recovered after the Covid pandemic caused the Dollar to increase, leading to a continuous decline in the price of gold.
- Profit¹⁸: Barrick Gold's net profit is similar to the continuous decline in revenue in the last 2 years. However, the price of gold is showing signs of increasing again.
- Balance sheet¹⁹: Barrick Gold's 2022 balance sheet shows the company has a solid asset base (\$45,965 million in total assets) mainly mineral properties, plant and equipment (\$25,825 million). This lays the foundation for future growth.

b. Competitive Positioning

- Market and Industry position: Barrick Gold is not only a major player in the global gold mining industry, with branches in many countries with a market capitalization²⁰ of \$30,241 billion, but also the largest gold producer with 4.14 million ounces²¹ by 2022. Facing major competitors, Barrick Gold retains a strong position in the industry with its diverse portfolios and commitment to sustainable mining.

c. Valuation Metrics (At the end of 2022)

¹³ [Union Pacific PE Ratio 2010-2023 | UNP | MacroTrends](#)

¹⁴ [Union Pacific Price to Sales Ratio 2010-2023 | UNP | MacroTrends](#)

¹⁵ [Union Pacific Price to Book Ratio 2010-2023 | UNP | MacroTrends](#)

¹⁶ [Union Pacific Corporation \(UNP\) Stock Price, News, Quote & History - Yahoo Finance](#)

¹⁷ [Barrick Gold Revenue 2010-2022 | GOLD | MacroTrends](#)

¹⁸ [Barrick Gold Net Income 2010-2022 | GOLD | MacroTrends](#)

¹⁹ [Barrick Gold Balance Sheet 2009-2023 | GOLD | MacroTrends](#)

²⁰ [Barrick Gold Corporation \(GOLD\) Stock Price, News, Quote & History - Yahoo Finance](#)

²¹ [Barrick Gold: production of gold 2022 | Statista](#)

- Price-to-Earnings (P/E)²² Ratio (70.72): This is the highest ratio in the past 3 years. It can demonstrate the company's growth potential and ability to maintain its position in the gold mining industry.
- Price-to-Sales (P/S) Ratio²³ (2.73): quite high compared to the market average.
- Price-to-Book (P/B) Ratio²⁴ (0.95): low ratio compared to the industry average.

d. Risk and Potential return

- Beta in 2023²⁵ is 0.13. This shows that stocks are less volatile than the market.
- Risk: The risks that Barrick gold faces are commodity price risks (gold price fluctuations), environmental and political risks. Besides, the company has a significant debt, so the financial risk is also something that Barrick Gold must pay attention to.
- Potential Return: Although the price of gold fluctuates and somewhat declines in recent years, gold is considered a safe-haven asset and tends to perform well in uncertain economic times. Besides, Barrick Gold is a large gold mining company with many branches around the globe. This minimizes operational and geopolitical risks

4. NETFLIX INC (NFLX)

Sector: Technology Services

Industry: Data Processing Services

a. Financial Performance

- Revenue²⁶: Netflix's revenue has increased steadily over the years, especially during the Covid 19 epidemic period when most users had to stay at home. In 2022, Netflix's revenue reached \$31,616 billion, an increase of 6.46% compared to 2021. The growth rate is somewhat slowed down due to competition from rival companies and film studios.
- Profit²⁷: Netflix's profit in 2022 decreased by 12.2% compared to 2021. It can be said that this is the result of the price increase of Netflix service packages. In addition, the company also faces the challenge of maintaining subscriber growth as studios want to build their own platforms and stop providing rights to Netflix.
- Balance sheet²⁸: It shows a strong Netflix's financial position (total asset: \$48,594 billion) with substantial cash on hand (\$6,058 billion in 2022). Expansion and content production has left a significant long-term debt (\$14,353 billion).

b. Competitive Positioning

- Market and Industry position: Netflix is currently one of the major players in the online entertainment industry (market capitalization²⁹: \$181.982 billion), operating under the Subscription Video on Demand (SVOD) model. With its rich library of original content and ability to adapt to user preferences, the company has maintained its position in the market. This is reflected in the number of subscribers increasing steadily over the years (223.09 million subscribers³⁰ in 2022).

c. Valuation Metrics (At the end of 2022)

²² [Barrick Gold PE Ratio 2010-2022 | GOLD | MacroTrends](#)

²³ [Barrick Gold Price to Sales Ratio 2010-2022 | GOLD | MacroTrends](#)

²⁴ [Barrick Gold Price to Book Ratio 2010-2022 | GOLD | MacroTrends](#)

²⁵ [Barrick Gold Corporation \(GOLD\) Stock Price, News, Quote & History - Yahoo Finance](#)

²⁶ [Netflix Revenue 2010-2023 | NFLX | MacroTrends](#)

²⁷ [Netflix Net Income 2010-2023 | NFLX | MacroTrends](#)

²⁸ [Netflix Balance Sheet 2009-2023 | NFLX | MacroTrends](#)

²⁹ [Netflix, Inc. \(NFLX\) Stock Price, News, Quote & History - Yahoo Finance](#)

³⁰ [Netflix: number of subscribers worldwide 2023 | Statista](#)

- Price-to-Earnings (P/E) Ratio³¹ (29.64): high ratio. It can demonstrate the company's growth potential and ability to maintain its position in the streaming entertainment industry.
- Price-to-Sales (P/S) Ratio³² (4.21): quite high compared to the market average.
- Price-to-Book (P/B) Ratio³³ (6.32): high ratio. It can be understood that the market is expecting Netflix to have a good future and investors are willing to pay more for book value.

d. Risk and Potential return

- Beta in 2023³⁴ is 1.27. This shows that Netflix's stock price volatility is higher than the market and has high profit potential.
- Risk: potential risks that Netflix may face such as changes in the economy, regulations, competition from other transportation companies. Besides, developing software to suit third-party devices is also a challenge for Netflix.
- Potential Return: This depends on maintaining and growing the user base, continuing to produce and copyright high-quality content.

5. WALT DISNEY COMPANY (DIS)

Sector: Consumer Services

Industry: Movies/Entertainment

a. Financial Performance

- Revenue³⁵: Disney's revenue starts to grow again in 2021 (22.7% higher than 2020), after a sharp decline in 2020 because of the Covid 19 epidemic. The expansion of streaming services is expected to contribute greatly to Disney's revenue in the near future.
- Profit³⁶: Disney's net income has rebounded in 2022 after two consecutive years of decline as a result of the Covid pandemic on theme parks and studios. However, the development of the Disney+ streaming service is contributing to Disney's profits.
- Balance sheet³⁷: the 2022 balance sheet shows that the company has a solid asset base (total asset: \$202,124 million) with significant investments in property, plant, and equipment (\$27,612 million) and significant amount of equipment and intangible assets such as intellectual property rights (\$92,214 million).

b. Competitive Positioning

- Market and Industry position: Disney is a big player in the entertainment industry with many different market segments. In the Parks, Experiences and Products segment, Disney owns a chain of famous theme parks and resorts (Walt Disney World, Disneyland and Disney Cruise Line). Besides, Disney is a famous movie producer and an owner of famous franchises like Marvel, Star Wars and Pixar.

c. Valuation Metrics (At the end of 2022)

- Price-to-Earnings (P/E) Ratio³⁸ (47.74): high ratio in the industry. It can demonstrate the company's growth potential and ability to maintain its position in the entertainment industry.
- Price-to-Sales (P/S) Ratio³⁹ (1.88): quite high compared to the market average.

³¹ [Netflix PE Ratio 2010-2023 | NFLX | MacroTrends](#)

³² [Netflix Price to Sales Ratio 2010-2023 | NFLX | MacroTrends](#)

³³ [Netflix Price to Book Ratio 2010-2023 | NFLX | MacroTrends](#)

³⁴ [Netflix, Inc. \(NFLX\) Stock Price, News, Quote & History - Yahoo Finance](#)

³⁵ [Disney Revenue 2010-2023 | DIS | MacroTrends](#)

³⁶ [Disney Net Income 2010-2023 | DIS | MacroTrends](#)

³⁷ [Disney Balance Sheet 2009-2023 | DIS | MacroTrends](#)

³⁸ [Disney PE Ratio 2010-2023 | DIS | MacroTrends](#)

³⁹ [Disney Price to Sales Ratio 2010-2023 | DIS | MacroTrends](#)

- Price-to-Book (P/B) Ratio⁴⁰ (1.55): high ratio. It can understand that the market is expecting Disney to have a good future and investors are willing to pay more for book value.

d. Risk and Potential return

- Beta in 2023⁴¹ is 1.3. This shows that Disney's stock price volatility is higher than the market and has high profit potential.
- Risk: In addition to the risks that companies will face such as economic, regulatory and competitor risks, Disney must also be mindful of operational risks as the Disney business is largely associated with related to supply chains such as amusement parks, resorts.
- Potential return: Disney is considered well-positioned for long-term growth with a loyal customer base and content system expected by children. The Disney+ streaming platform has already delivered some achievements, surpassing 164 million subscribers⁴² by the end of 2022.

III. Investment Strategy ([File excel](#))

1. Efficient Frontier

- Collect historical data (From 07/06/2022 - 06/06/2023)
- Calculate the return, variance and standard deviation of each asset

	AAPL	NFLX	UNP	GOLD	DIS
Return	0.0009601	0.003288883	-0.00014308	-0.000348409	-0.0003387
Variance	0.000381196	0.000997534	0.00027883	0.000554292	0.00050415
Standard deviation	0.019524231	0.031583767	0.01669825	0.023543404	0.022453284

- Calculate the covariance

	AAPL	NFLX	UNP	GOLD	DIS
AAPL	0.0003812	0.00034541	-9.955E-06	9.7623E-05	4.7323E-05
NFLX	0.00034541	0.000998	-3.4E-05	0.000192	2.22E-05
UNP	-9.955E-06	-3.4E-05	0.000279	2.74E-05	0.000172

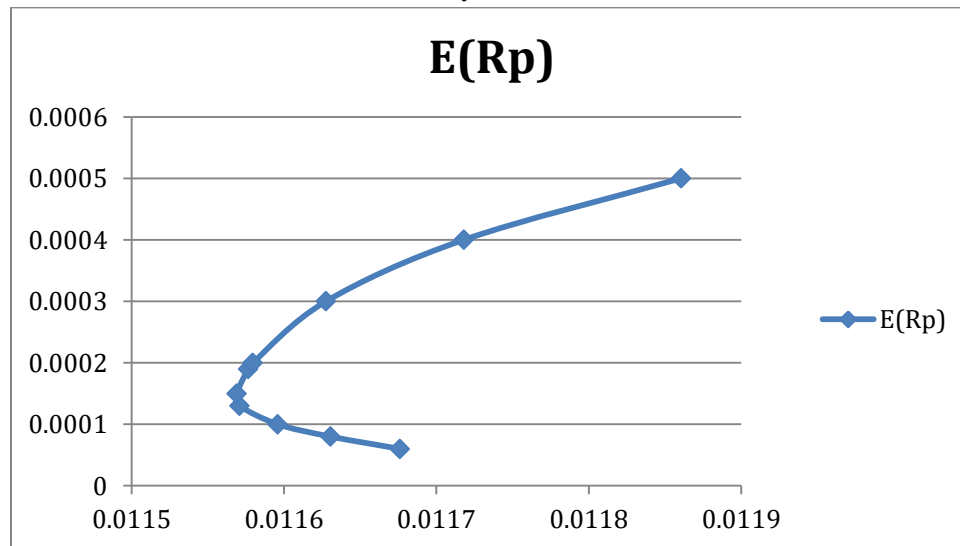
⁴⁰ [Disney Price to Book Ratio 2010-2023 | DIS | MacroTrends](#)

⁴¹ [The Walt Disney Company \(DIS\) Stock Price, News, Quote & History - Yahoo Finance](#)

⁴² [Global number of Disney+ subscribers 2023 | Statista](#)

GOLD	9.7623E-05	0.000192	2.74E-05	0.000554	4.57E-05
DIS	4.7323E-05	2.22E-05	0.000172	4.57E-05	0.000504

- Draw Efficient Frontier by excel function



2. Investment Result

- Account: \$100.000

	Stock Beta	Expected Return of Stock	Price	Quantity	Total	Stock Weight	Expected Return for (P)	Beta
AAPL	1.3	0.00093634	\$152.56	148	\$22,578.88	33.04%	0.000309327	0.42946429
NFLX	1.5906	0.003208701	\$340.15	100	\$34,015.00	22.32%	0.000716228	0.35504464
UNP	0.9318	-0.00024606	\$197.05	100	\$19,705.00	22.32%	-5.49231E-05	0.20799107
GOLD	0.9563	-0.00052931	\$17.62	50	\$881.00	11.16%	-5.90747E-05	0.10672991
DIS	1.2492	-0.0003387	\$102.61	50	\$5,130.50	11.16%	-3.78014E-05	0.13941964

Expected return for (P)	0.0874%
Portfolio Beta	1.23865

