



Predictability of Asset Returns on Blue Chip Stocks

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Abstract. The research question of this article is whether investing in US indexes (blue chip stocks) under the context of increasing inflation can get a net income after subtracting inflation. The research method is to use quantitative analysis to analyze the long-term return rate of the index through the data of the past ten years. The research objects are the Dow Jones, Nasdaq and S&P 500 indexes in the United States. The data was downloaded from the macro trends website. Each stock contains a total of more than 3000 pieces of data from 2010 to 2021. The result of the study is that long-term holding of blue-chip stocks (index funds) has a high probability of getting net return (deduct inflation).

Keywords: Blue-Chip · Stocks; Return · Long Term · Asset

1 Introduction

At the policy meeting that ends on June 16, 2021, Fed officials decided to maintain its key interest rate at near zero, but they are expected to raise interest rates twice before the end of 2023 [1]. Behind this policy change is a stronger economic rebound and higher-than-expected inflation. In this context, along with the serious currency over-issuance in the United States, more and more people are beginning to pay attention to how to effectively invest to avoid the loss caused by inflation. Because some investments can obtain stable small returns, but in the context of increasing currency inflation, even if gains are made, they may not keep up with the rate of inflation. Although the amount of currency held has increased, the total purchasing power has declined. In the past research in this field, as noted by Yifang, yuan, sibo (2019), 8% can be used as the benchmark annual rate of return for long-term investment in Chinese blue-chip stocks [8]. Hartono (2019) said that blue chip stocks (in this case BBRI stock) provide returns much higher than the potential returns of the three retail SBNs [2]. Namrataa (2019) suggested that blue chip stocks have a high chance of obtaining high investment returns [7]. The research results all show that blue chip stocks will have high returns, but under the premise that inflation is rising year by year, can such high returns cover inflation and obtain real gains? The research theme of this article is the predictability of asset returns and the purpose is to explore the predictability of mid- and long-term asset returns of blue-chip stocks in the context of inflation. The research method is quantitative analysis based on the historical

data of Dow Jones, Nasdaq and S&P 500 from 2010 to 2021. Furthermore, the author will analyze the trend through the data of all the opening days of these three indexes in the past 10 years.

2 Research

In the following, the author will calculate the annual net growth table by subtracting inflation from the annual index data and analyze why this has changed in the past five years and the meaning behind the numbers.

2.1 Dow Jones

The Dow Jones Index refers to the Dow Jones Stock Price Average Index, which is the most influential and widely used stock price index in the world. It is compiled based on the stocks of some representative companies listed on the New York Stock Exchange and consists of four stock average price indices. The Dow Jones Index includes many well-known international companies, including Nike, Kraft, Boeing, Citi, DuPont, General Electric, Intel, Johnson & Johnson, Coca-Cola, JPMorgan Chase, Microsoft, McDonald's, Goldman Sachs, Apple, Procter & Gamble, Wal-Mart and other large multinational companies. The index aims to reflect the overall trend of the US stock market, covering multiple industries such as finance, technology, entertainment, and retail. Through the ten-year chart of the Dow Jones Index (Fig. 1), it can be clearly found that this decade is a steady upward trend. As shown in Table 1, the index rose from 10583.96 points in 2010 to 30223.89 points in 2021, a total increase of 2.86 times. This seems to be a considerable gain, but we also need to consider the factor of inflation, because the world's inflation has also intensified in the past decade. Therefore, the question is, can such growth cover the inflation rate?

The world inflation rate represents the average value of the world's inflation that year. It can objectively reflect the changes in global prices and thus reflect the actual purchasing power of currencies. It can be seen from the Table 2 that the inflation rate has been relatively stable in the past five years, but in fact it is because the Fed has continuously raised interest rates in order to curb inflation. Since the beginning of the current round of interest rate hike cycles in December 2015, the Fed has raised interest rates. Eight times, the federal funds rate range rose to 2%–2.25%. If interest rates continue to rise, it will significantly inhibit the economy, especially investment. For American companies, the financing costs will be higher, and their profits will be squeezed, which will further encourage them to reduce investment and form a vicious circle.

2.2 S&P 500

The S&P 500 stock price index was launched by McGraw Hill in the United States. 500 stocks were selected from the New York Stock Exchange, the American Stock Exchange and the OTC, including 400 industrial stocks, 40 public utilities, and 40 financial companies. The index of stocks and 20 transportation stocks, weighted by equity, takes the average stock price during the period from 1941 to 1943 as the base 10, and was



Fig. 1. Dow Jones - 10 Year Daily Chart

Table 1. Stock value on the first opening day of the year

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
10583.96	11670.75	12397.38	13412.55	16441.35	17832.99
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
17148.94	19881.76	24824.01	23346.24	28868.8	30223.89

Table 2. World inflation rate

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
3.339%	4.822%	3.725%	2.606%	2.346%	1.434%
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
1.495%	2.183%	2.421%	2.152%	1.939%	–

promoted by S&P in 1957. The calculation is carried out using the weighted average method, with the number of stocks listed as the weight, and the weighted calculation is carried out according to the base period. As shown in Table 3, the S&P 500 index rose from 1,132.99 points in 2010 to 3,700.65 points in 2021, an increase of 3.27 times, which obviously brought considerable gains. The steady growth in Fig. 2 reflects S&P 500 investors’ optimism about the performance of the companies in the index over the past decade and their prospects for the future.



Fig. 2. S&P 500 - 10 Year Daily Chart

Table 3. Stock value on the first opening day of the year

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
1132.99	1271.87	1277.06	1462.42	1831.98	2058.2
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
2012.66	2257.83	2695.81	2510.03	3257.85	3700.65

Table 4. Stock value on the first opening day of the year

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
2308.42	2691.52	2648.72	3112.26	4143.07	4726.81
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
4903.089	5429.084	7006.9	6665.94	9092.188	12698.45

2.3 NASDAQ Composite Index

Nasdaq’s listed companies cover all new technology industries, including software and computers (Apple has the largest weight, as well as Microsoft, Google, Cisco, Intel, etc.). Many well-known companies are mainly high-tech companies, most of which are in the computer industry, including telecommunications, biotechnology, retail and wholesale trading companies, and are mainly composed of hundreds of fastest-growing advanced technology, telecommunications and biological companies in the United States, including Microsoft, Intel, AOL and Yahoo, thus becoming the “new economy” of the United States. As shown in Table 4, the Nasdaq index has risen from 2308.42 points in 2010

to 12,698.45 points in 2021, proving that technology companies have developed very rapidly in the past decade.

3 Results and Analysis

The return on net assets is obtained by subtracting the current year’s inflation rate from the current year’s index rate of return. It reflects the annual net profit of index investment. By subtracting the inflation rate, we can avoid the difference in purchasing power of money each year to obtain an accurate rate of return. Through the observation from Tables 5, 6 and 7, it can be found that the trends of these three indexes in the past five years are the same, and they are all showing an upward trend, but they all have a slight correction in 2011, 2015, 2018. Through calculation, the average annual net return on assets of the Dow Jones Index, S&P 500 Index and Nasdaq Index in the past ten years are 7.967%, 9.328%, and 15.271% and the average net return in the past five years is 10.6%, 11.577% and 21.159% respectively. The rise in the stock market proves that the real economy has been on the bright side and reflects that the U.S. economy has been growing in the past decade (Fig. 3).

The fuse of the European debt crisis was the downgrade of Greece’s sovereign rating by the world’s three major rating companies in December 2009, which plunged it into



Fig. 3. NASDAQ Composite Index - 10 Year Daily Chart

Table 5. Net Asset Returns in the Dow Jones (deduct inflation)

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
6.929%	1.404%	4.464%	19.955%	6.118%	-5.270%
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
14.441%	22.675%	-8.374%	21.503%	2.755%	-

Table 6. Net Asset Returns in the S&P 500 (deduct inflation)

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
8.919%	-4.414%	10.790%	22.664%	10.002%	-3.647%
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
10.686%	17.215%	-9.312%	27.641%	11.653%	-

Table 7. Net Asset Returns in the NASDAQ Composite Index (deduct inflation)

<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
13.257%	-6.412%	13.776%	30.515%	11.744%	2.295%
<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
9.233%	26.879%	-7.287%	34.246%	37.724%	-

a fiscal crisis and caused the euro to fall sharply against the US dollar [4]. In 2011, the US stock market was affected by the European debt crisis and languished. The three major indexes in America have been hit hard, with net return of 1.404%, -4.414%, and -6.412% respectively (as shown in the year 2011 of Tables 5, 6 and 7). Since 2012, through the implementation of expansionary monetary policies, including reducing interest rates to between 0% and 0.25%, and quantitative easing, the US economy has shown signs of a moderate recovery and the financial market has recovered. But the good times did not last long. In 2015, the Chinese stock market experienced broken down, leading to a sharp correction in the three major U.S. stock indexes, with the largest correction being close to 20%. In 2016, Trump was elected president of the United States. Most investors believe that after Trump won the election, the Republican Party, which is in charge of the White House and Congress at the same time, means that it will implement looser supervision and lower tax rates, thereby promoting economic growth. At the same time, Trump has also shown recognition in the market that Trump is preparing to form the richest cabinet in history. The cabinet has absorbed many business managers who have little political experience but rich business experience. Edward Yardeni, a Wall Street veteran and economist, believes that we should not underestimate this huge change that is about to take place. It is contrary to what we call a government composed of ‘community organizers’. A government composed of people doing transactions will be a completely different system. And, the market appreciates this. In 2017, Trump took office and implemented a tax reform plan to implement tax reduction policies for enterprises in all aspects. Trump also withdrew from TPP. Trump once said that TPP is a blow to American companies. Trump also launched a ten of billions of dollars in infrastructure plans to repair cities and rebuild highways, bridges, tunnels, airports, schools, Hospitals, etc. This has stimulated employment and economic development in the United States, and each of the three indexes have a net increase by more than 15%. On February 22, 2018, U.S. time, the White House official website issued a memorandum with the President of the United States regarding the 301 investigation. The President Trump signed the

memorandum. The memorandum stated that the United States will impose a 25% tariff on certain Chinese goods and called on other WTO members to boycott and restrict Chinese companies' investment in the United States. This also led to the Chinese government's immediate countermeasures, imposing additional tariffs on American products imported from China. The implementation of Trump's trade protectionism aggravated investor panic and also caused the three major indexes to show a downward trend in 2018. The net yield of the three major indexes was close to -10% that year. The stock market's rise in 2019 occurred when the Fed implemented an easing cycle in response to fears of an imminent economic recession (the Fed cut interest rates three times), and it is widely believed that the economic recession is the number one risk facing the stock market. Others believe that the main reason for the disconnect between corporate profits and stock prices this year is a time issue. If the comparison cycle is lengthened, it will be clearer. But in short, the three indexes all have a net growth of more than 20% in 2019, and the returns are considerable. In 2020, the price of crude oil fell, and the lowest point even fell to negative, resulting in a decline in the growth rate of the Dow Jones and S&P500 indexes, which include more diversified companies, but only emerging technology stocks (Nasdaq) seem to have not been affected by the epidemic. Rather than falling but rising against the background. However, the net yields of the three indexes are all positive, proving that the market is still optimistic even under the influence of crude oil price fluctuations and the pandemic.

4 Conclusion

Through the specific analysis of the above index net return, we can conclude that the long-term holding of blue-chip stocks (index funds) has a high probability of getting net return (deduct inflation), even if there are occasional special circumstances, such as the pandemic. The results of the research by Meutia, Talbani, Ardian (2019) show that the size of a company has a relationship with the return on stocks, while market risk has no effect on the return of blue-chip stocks [6]. Ken L. (2004) noted that the stocks in the KFX index experienced an abnormal decline of -13% in the six months before the deletion, and the trading volume and stock price also declined after the deletion [5]. The average return on the additional stocks is 8%, and there is no significant change in trading volume or trading efficiency. This indicates that the stocks in the KFX index face higher demand or more attention than the stocks outside the index. Iman, Syamruddin, Irwansyah (2020) suggested that the result is not significant for the investor preference and mispricing index for the future returns of blue-chip stocks [3]. However, this study still has some limitations, because this study only includes three U.S. indexes, and it does not rule out that the indexes of other countries and regions will have different changes. Secondly, most of the analysis in the past five years is the output of economic policies under the leadership of the Trump administration. Each administration and president may have different economic strategies leading to changes in the stock market.

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