1. Background

Over the past few years, the global economy has been experiencing an unprecedented hard time. Worldwide lockdown restrictions to fight against the spread of Covid-19 have slowed down the global economy and the U.S Fed had eased the monetary policy to boost the economy. The policy has caused the hike in inflation rate and, recently, the U.S Fed started to raise interest rate to stabilize the inflation. However, this is causing a turbulence in the global financial markets and the recent outbreak of the Russia-Ukrainian War has aggravated the market uncertainties. As a result, many investors are greatly affected during this time. This study focuses on exploring different global economic indicators using historical data to find insights on optimizing the future investment portfolio for individual investors, especially for those investing in Korean stock market.

2. Findings & Insights

2-1. KOSPI vs. Currency Rate (USD-KRW)

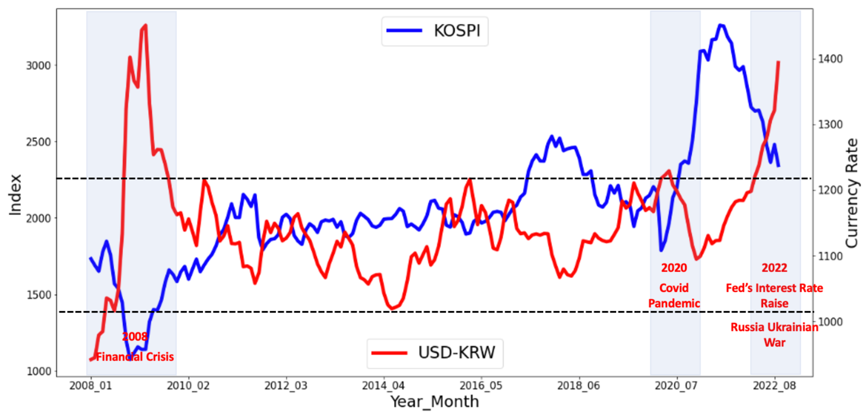

Figure 1: The correlation between KOSPI and Currency Rate (USD-KRW)

Figure 1 illustrates the correlation of the KOSPI (Korea Composite Stock Price Index) and the currency rate (USD-KRW) over the past 14 years. As seen in the chart, these two indicators tend to move in the opposite directions, especially during the time of global economic shocks. This can be clearly seen during the Financial crisis (2008), Covid pandemic (2020), and the Russia Ukrainian War (2022).

From 2010 to early 2022, the currency rate had been moving between ₩1,000 and ₩1,200, on average. Considering the fact that KOSPI and the currency rate (USD-KRW) move in opposite direction, the currency rate can be referenced as a market predictor to decide when to invest more in Korean stock market. When the currency rate converges to ₩1,000, the investors can consider reducing the weight of Korean stocks in the portfolio and increasing the weight of U.S Dollar and related ETFs. On the other hand, when the currency rate converges to ₩1,200, the investors can take advantage of the high currency rate and consider increasing the weight of Korean stocks in the portfolio.

2-2. KOSPI vs. NASDAQ / S&P500

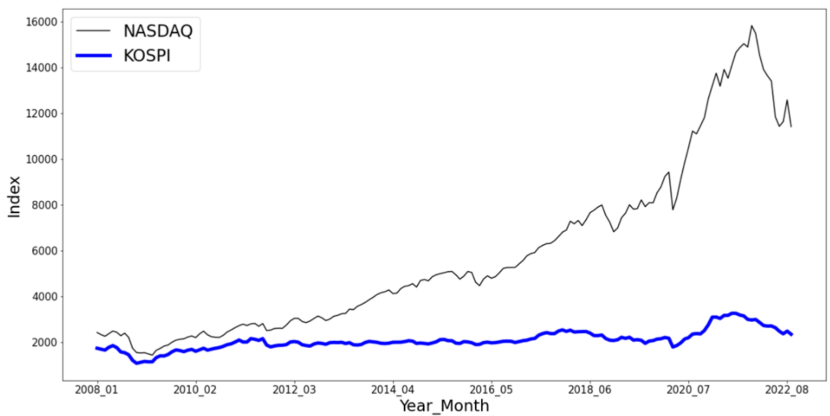

Figure 2: The correlation between KOSPI and NASDAQ

As can be seen from the Figure 2, NASDAQ has been exponentially growing in upright direction nearly 8 times from 2,000pt to 16,000pt until the recent market crash. On the other hand, KOSPI has been moving up and down between 1,000pt and 3,300pt, known as BOXPI (Boxed-in KOSPI). Therefore, the long-term investors in U.S stock market were successful in making huge profits, however, not for those who invested in the Korean stock market.

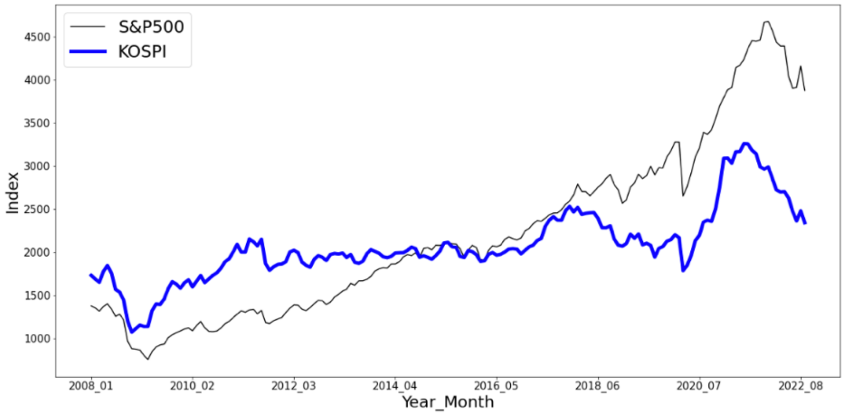

Figure 3: The correlation between KOSPI and S&P500

As seen in the Figure 3, it is hard to say that the Korean and U.S stock markets are highly correlated to each other, on average. However, when there were global economic shocks and U.S Fed decided to ease monetary policy to supply money into the market, the two indices moved in same direction.

It is hard to guarantee that the U.S stock market will continue to grow at the same rate in the future. However, considering the fact that the U.S and the Korean stock markets are not moving in the same direction, especially during the market growth phases, by investing in both markets investors can expect higher profits. Additionally, Korea has a lot of great world-leading companies, which are significantly under-valued. Therefore, the values of these companies are expected to be re-rated at some point of time in the near future and this will lead KOSPI to move upright direction in the long-term.

2-3. KOSPI and U.S Treasury Bond

When investing in bonds, investors can gain profits in two ways: Capital gain and interest payments. Long-term bonds tend to have higher interest payouts and short-term bonds have lower interest payouts. However, this study will mainly focus on the capital gain aspect of the investment. Bonds can be broadly divided into three different types: Short-term, Mid-term, and Long-term based on their durations. In this study, the duration between 1 to 3 years is considered short-term (ETF: SHY), between 7 to 10 years as mid-term (ETF: IEF), and more than 10 years (ETF: SPTL) as long-term.

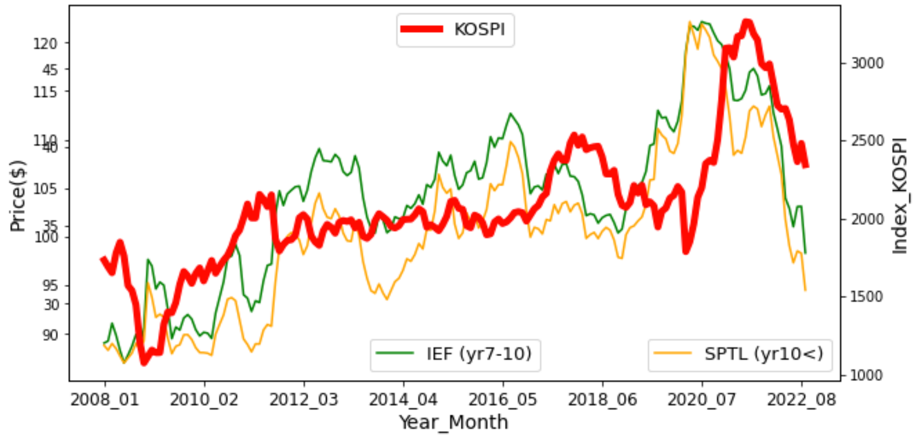

Figure 4: KOSPI and U.S Treasury Bond ETFs

Figure 4 illustrates how the prices of U.S treasury bond ETFs changed over time against KOSPI. It seems the price of U.S treasury bond serves as a leading indicator of KOSPI. It is hard to say, whenever the prices of the ETFs rise the KOSPI rises accordingly. However, whenever there was a hike in the KOSPI there was a hike in the prices of ETFs 6 months to 1 year before its occurrence.

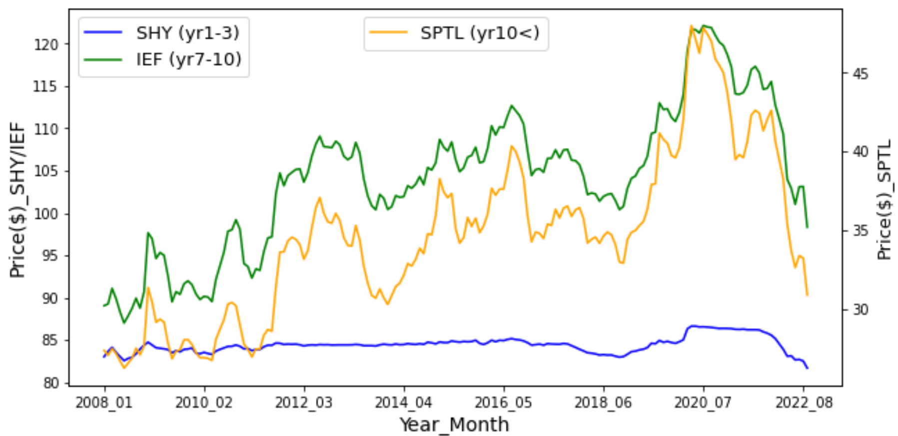

Figure 5: U.S Treasury Bond ETFs with Different Durations

Figure 5 illustrates the price volatility comparison of different U.S treasury bond ETFs based on their durations. As seen from the chart, IEF (Short-term) has the smallest variation in the price over time, while SPTL (Long-term) has the biggest price variation. From the capital gain perspective, although the long-term ETF has the biggest price volatility, the investor can expect the highest return. Considering the facts that the long-term bonds tend to have higher interest payouts over time and have higher chance of maximizing capital gain in the long-run, investing in long-term bonds seems to be the best option. However, due to it price volatility over time, if the investors want to temporarily invest in bonds for risk hedging purposes or have plans to invest in other assets in the near future, investing in short-term bonds seems to be a better choice. Therefore, the investors can consider investing in both short-term and long-term bonds, but decide the proportions depending on their future investment plans.