

The Impact of Federal Reserve Interest Hike: Currency, Stock and Bond Market

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Abstract. The paper investigates the consequences of interest rate hikes initiated by the Federal Reserve on various financial markets. This comprehensive analysis examines the relationships between interest rate changes and their effects on currency, stock, and bond markets, which also discuss the potential scenario or solutions in respond to the rate hike. By analyzing data from different regions of the world, the paper discusses how these monetary policy decisions influence market dynamics, investor sentiment, and overall economy. Federal Reserve raising interest rate has impacted the world from various aspects, which each's country government needs to plan strategically to respond to the impact toward currency, stock, and bond market. The findings presented in this paper contribute valuable insights for policymakers, investors, and economists seeking a deeper understanding of the intricate interplay between central bank actions and financial market reactions, which it is important to understand the impacts and apply monetary policy in order to ensure economic stability.

Keywords: Federal Reserve, Rate Hikes, Currency, Stock, U.S. 10-year Bond.

1. Introduction

The Federal Reserve ensures the benefit of the public, aimed at enhancing the well-being of the U.S. economy and ensuring the stability of the U.S. financial system. It actively observes risks within the financial system and collaborates both domestically and internationally to ensure it contributes to a robust economy for American households, communities, and businesses. Furthermore, the Federal Reserve establishes monetary policies within the United States with the goal of fostering optimal employment levels and price stability in the nation's economy [1].

The purpose of the topic is to delve into the intricate relationship between these interest rates and the Federal Reserve while also examining how they impact the broader worldwide economy. By focusing primarily on exploring two key aspects - namely currency markets and financial markets – the paper provides an extensive analysis of how raising interest rates affects different facets of global community.

2. Interest Rate and Currency Market

The currency market is a crucial component of the global financial system. Interest rates have a substantial influence on exchange rates, which can have a profound impact on the overall economic stability. Central bank policies, such as interest rate adjustments, serve as tools for managing domestic economies and, in turn, have a significant impact on a nation's currency.

2.1. The Relationship between Interest Rate and Currency Market

Interest rates and currency markets share a symbiotic relationship. When a country raises its interest rates, it tends to attract foreign capital seeking higher returns, causing an uptick in demand for its currency, which leads to currency appreciation. Conversely, lower interest rates can discourage foreign investment and result in currency depreciation. [2]

2.2. The Impact toward Currency Market

The Federal Reserve raising of interest rate has a major effect on foreign exchange market. Such a policy indicates that there is a need for a tightening of monetary policy aimed at controlling inflation and maintaining economic stability within the nation.

When the Federal Reserve increases interest rates, it typically results in the U.S. dollar strengthening in the currency markets. This is due to the fact that elevated interest rates render U.S. assets more appealing to foreign investors in search of greater returns. In 2022, statistics revealed that the U.S. dollar experienced a 12% appreciation, reaching its highest level in September 2022 in the past two decades. [3] As a result, there is increased demand for the U.S. dollar, causing its value to rise relative to other currencies.

Figure 1, figure 2, and figure 3 show the changes of CNY, JPY, and EUR since the beginning of 2022. [4].

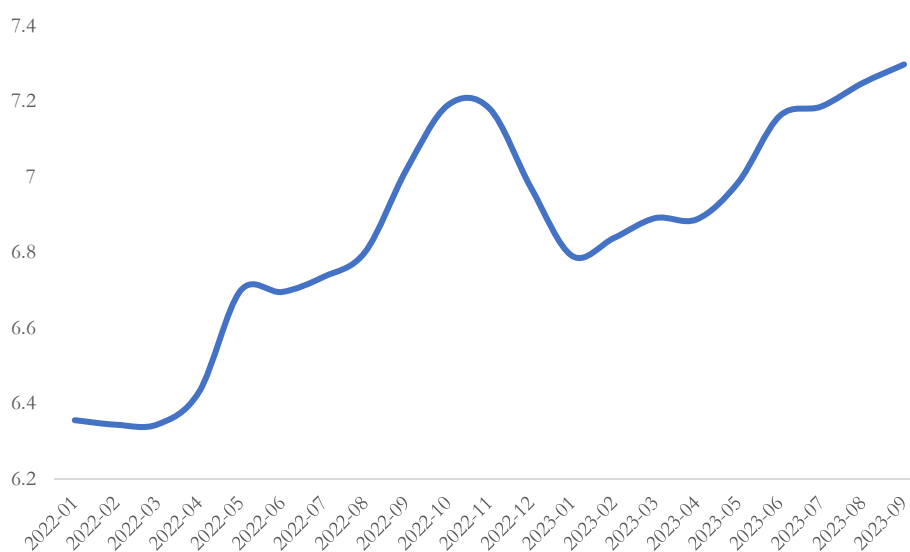


Figure 1. USD to RMB Exchange Rate

Data source: Board of Governors of the Federal Reserve System [4].

Photo credit: Original

Figure 1 illustrates that, in March and April of 2022, the two months preceding the Federal Reserve's commencement of interest rate hikes, the U.S. 10-year Treasury yield saw an increase. Concurrently, the exchange rate of the U.S. dollar to Chinese RMB rose for two consecutive months, indicating a decline in the RMB relative to the U.S. dollar.

In June 2022, there was another depreciation of the RMB against the U.S. dollar. During this month, the U.S. 10-year bond yield increased once more, resulting in a drop in the spot rate of the U.S. dollar against the RMB. This decrease signified a slight depreciation of the RMB against the U.S. dollar. However, in July, the RMB resumed its depreciation against the U.S. dollar, even though the U.S. 10-year bond yield retraced its position during that same month.

This shows that the USD/CNY exchange rate and the Federal Reserve's pattern of interest rate hikes are confluent, especially in May 2022, following the Federal Reserve's announcement of a 50bps interest rate hike, which led to a substantial decrease in the CNY exchange rate. [5]

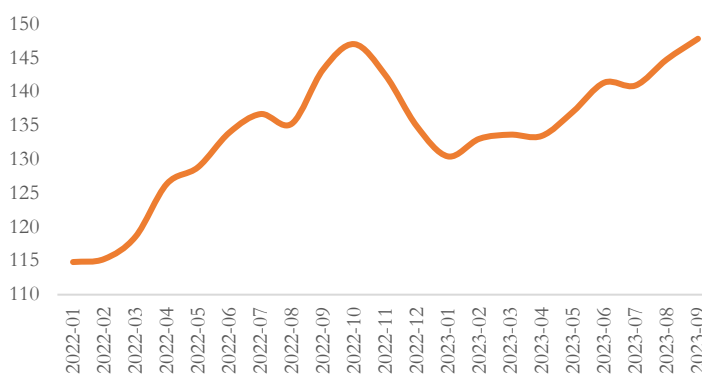


Figure 2. USD to JPY Exchange Rate

Data source: Board of Governors of the Federal Reserve System [4].

Photo credit: Original

Figure 2 shows that, similar with CNY, JPY also experiences increasingly depreciation after Federal Reserve’s interest hike since March of 2022 until September of 2023.

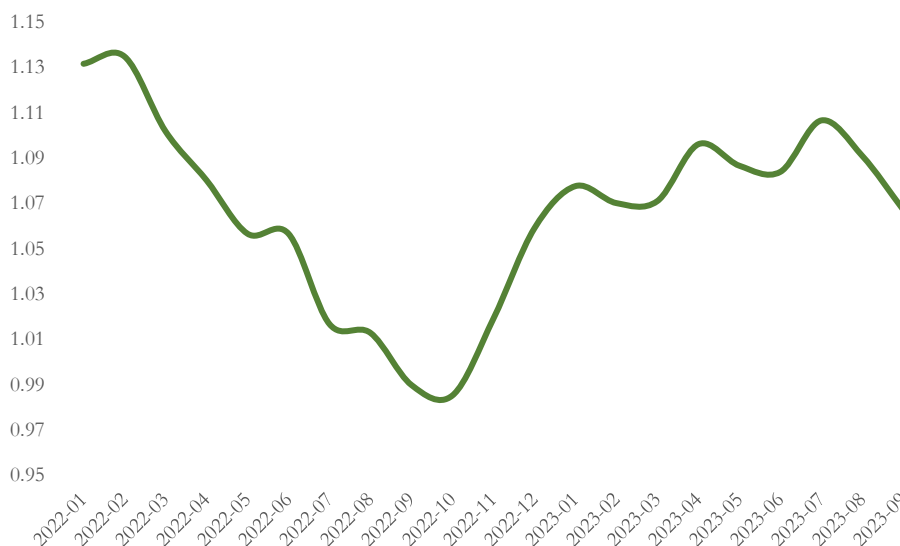


Figure 3. Euro to USD Exchange Rate

Data source: Board of Governors of the Federal Reserve System [4].

Photo credit: Original

As shown in figure 3, EUR first experienced depreciation. However, due to the monetary policy announced European Central Bank (ECB), EUR did not continue to depreciate, which the specific strategy adopted by ECB will be discussed in the following part.

2.3. What Policy can other Countries Apply to Strategically Reduce the Negative Impacts of Federal Reserve Raising Interest?

Mitigating the impact of the Federal Reserve raising interest rates requires other countries’ central bank to establish a strategic approach. To strategically reduce the negative impacts, Monetary Policy Adjustment could be necessary, which other central banks can adjust their interest rates, to offset the impact of Federal Reserve rate hikes. This can involve lowering domestic interest rates to stimulate economic activity and mitigate the potential outflow of capital to higher U.S. interest rates. The action taken by ECB in year of 2022 was an example. On December 15 2022, ECB had published a press release announcing their adjustments to the interest rates, which the Governing Council raised the 3 major ECB interest rates by 50 bps with effect from 21 December 2022. Following the announcement, EUR exchange rate starts to increase, which shows the adjustment’s effectiveness. [6]

3. Stock Market

This part of the paper centers on the implications of interest rate hikes on the stock market, which further analyze the critical factors that influence the market, the changes in global stock market, and the potential scenarios if the rate hikes continue.

3.1. The Impact toward Stock Market

The impact of the Federal Reserve raising interest rates on the stock market is a topic of paramount importance in the world of finance. As the central bank adjusts interest rates to manage inflation and economic growth, it sets in motion a complex interplay of forces that reverberate through the stock market. This interrelationship between interest rates and stock market is a critical element of financial dynamics, with higher rates potentially affecting stock valuations, corporate earnings, and investor sentiment.

3.2. Factors Influencing Stock Market Reactions

3.2.1. Discounted Cash Flows and Valuation Models

Variations in interest rates can substantially affect the current value of future cash flows, which is a fundamental element of stock valuation. [7] When interest rates increase, the discount rate utilized in discounted cash flow (DCF) analysis also escalates. This will lead to an increased discount factor being applied to future cash flows, thereby decreasing their current value. Therefore, stocks may appear less attractive from a valuation perspective. Investors may become more risk-averse and opt for lower-risk assets, leading to potential selling pressure on stocks. Conversely, when interest rates fall, the discount rate decreases, causing future cash flows to be valued more favorably, potentially driving stock prices higher. This inverse relationship between interest rates and the present value of future cash flows underscores the importance of considering interest rate changes in stock valuation and investment decisions.

3.2.2. Investor Sentiment

Investor sentiment, particularly their perceptions of the economy's health, plays a crucial role in influencing stock market reactions to interest rate changes. The initial premise, as presented in Delong, Shleifer, Summers, and Waldmann, suggests that investors are influenced by sentiment. [8]

When the Federal Reserve raises interest rates, it is often interpreted as a signal that the central bank believes the economy is strong and that inflation needs to be controlled. This can lead to mixed reactions in the stock market. If investors view the rate hike as a prudent measure to curb potential overheating and maintain economic stability, it can instill confidence, leading to a continuation of bullish sentiment. Conversely, if the rate hike is seen as an overcorrection or if there are concerns about its potential adverse effects on corporate earnings, investor sentiment may turn bearish, triggering selloffs. These reactions are supported by historical data, which shows that stock market responses to rate hikes can vary widely depending on the prevailing economic conditions and investor perceptions. For example, during periods of robust economic growth, the stock market has often continued to rise despite interest rate increases, whereas during economic uncertainties, rate hikes may lead to more cautious investor sentiment and market turbulence.

3.3. Potential Scenario

Suggested by Rob Haworth, the senior investment strategy director at U.S. Bank Wealth Management, if federal reserve continues to raise interest rate, the stock market is likely to be not as attractive. Rob Haworth said that when interest rates rise, stock investors tend to become more cautious about driving up stock prices due to the diminished appeal of future earnings compared to bonds offering more attractive yields in the current market. [9] This highlights the fundamental relationship between interest rates and stock prices. When interest rates rise, the yields on bonds and other fixed-income investments become more appealing to investors as they offer higher and more predictable returns compared to stocks. This increased attractiveness of bonds creates a strong

incentive for investors to shift their capital away from the stock market and into bonds, reducing demand for equities. Furthermore, higher interest rates can have a negative impact on the present value of future corporate earnings. As interest rates climb, the cost of borrowing for businesses increases, making it more expensive for them to finance growth and invest in new projects. This can lead to lower corporate profitability and reduced expectations for future earnings, which in turn can result in lower stock prices.

4. U.S. Treasury Bond

4.1. The Impact toward Treasury Bond

The U.S. treasury bond plays an important role in the world of finance and understanding its reaction to changes in interest rates is essential for both investors and policymakers. Fluctuations in interest rates can have profound effects on treasury bond price. This section will delve into the intricacies of this relationship, analyzing the dynamics of how treasury bond prices are influenced by shifts in interest rates.

4.2. Relationship between Bond Prices and Rates Changes

The value of U.S. Treasury Bonds, however depends, closely on changes of interest rates in the United States, where these interest rate movements quickly appear, reflected by a change of Treasury curve. Reported by U.S. Bank Asset Management Group, U.S. 10-year Treasury bond shows a significant increase since the year of 2022 [10], which was when Federal Reserve start their interest hike. As most people view treasury bond as a more secured investment, this could make other securities less attractive.

4.3. Impact to Global Economy

Bond's redemption periods may be affected by the Federal Reserve monetary policies. Also, changes in the yield environment could be influenced by the raising of interest rates by the federal reserve, which is done either to combat inflation or an overheated economy. Newly issued bonds usually have a higher coupon rate that comes with rising interest rates thus making them appealing to investors. As a result, these bondholders might decide to sell or redeem them earlier than at maturity and invest elsewhere, which will be more attractive, especially when these new yields are on offer. Such practice can result into early withdrawal of money invested in bonds which would make it less convenient for some investors. However, when the Federal Reserve reduces interest rates to fuel economic growth or curb depression, an earlier redemption period of bonds issuing high coupon may not be attractive to investors because they expect to gain the highest yield upon maturity. Because of this, the Federal reserve's decision regarding interest rate plays a vital role in determining the redemption duration for bonds.

4.4. Potential Scenarios

In addition, there can be quite possible scenario which will occur if Federal Reserve continues to raise interest rates. First, existing bond prices may decline as higher interest rates make newly issued bonds more attractive with better yields, leading to capital losses for bondholders. Additionally, a sustained series of rate hikes could result in an upward shift in the yield curve, impacting long-term bonds more significantly. This shift may affect borrowing costs for individuals, businesses, and the government, potentially slowing economic growth and investments. Overall, the bond market is highly sensitive to Federal Reserve interest rate policies, and continued rate increases can lead to significant repercussions on both bond prices and broader economic dynamics.

5. Conclusion

In summary, the Federal Reserve's decision to raise interest rates carries extensive implications that resonate throughout the global financial landscape. These pivotal decisions exert a profound influence on foreign exchange rates, the stock market, and the bond market worldwide. Consequently, a comprehensive understanding of how interest rate hikes impact a multitude of factors is imperative for investors, policymakers, and analysts. These implications ripple across various sectors, affecting individuals, corporations, and governments in profound ways, necessitating a nuanced comprehension of the ramifications and their far-reaching effects on the ever-evolving economic dynamics.

A Federal Reserve interest rate increase sends shockwaves through the global economic ecosystem, impacting not only financial markets but also international stability. Interest rates are the linchpin around which the entire monetary world revolves, shaping the trajectory of economies. It is paramount to appreciate how policy changes at the Federal Reserve intersect with the increasingly intricate and interconnected global economic environment.

This research underscores the intricate web of effects triggered by interest rate hikes in diverse markets and how governments, regulators, and financial institutions respond to these shifts. Understanding these effects on economic stability is fundamental for effective decision-making in this constantly evolving landscape. As the global economy continues to evolve, staying attuned to these complex ramifications is crucial for making informed decisions and promoting economic stability in an interconnected world.

References

- [1] The Fed explained [EB/OL]. Federal Reserve Board - The Fed Explained, 2021 - 08. (2021-08) [2023-10-26]. <https://www.federalreserve.gov/aboutthefed/the-fed-explained.htm>.
- [2] Hayes A. Interest rate parity (IRP) definition, formula, and example [EB/OL]. Investopedia, Investopedia, 2021-09-05. (2021-09-05) [2023-10-26]. <https://www.investopedia.com/terms/i/interestrateparity.asp>.
- [3] Will a strong US dollar return? J.P. Morgan Research [EB/OL]. Will a Strong US Dollar Return? | J.P. Morgan Research, 2023-02-03. (2023-02-03) [2023-10-26]. <https://www.jpmorgan.com/insights/research/currency-volatility-dollar-strength#:~:text=The%20U.S.%20dollar%20appreciated%20over, but%20has%20trended%20weaker%20since>.
- [4] Board of governors of the Federal Reserve System [EB/OL]. Federal Reserve Board - Foreign Exchange Rates - H.10 - October 23, 2023, 2023-10-23. (2023-10-23) [2023-10-26]. <https://www.federalreserve.gov/releases/h10/current/>.
- [5] Chen Y. The Impact of Federal Reserve Rate Hikes on CNY Interest Rates and Exchange Rates [J]. Modern Business, 2022 (29): 31 - 35.
- [6] European Central Bank. Monetary policy decisions [EB/OL]. European Central Bank, 2022-12-15. (2022-12-15) [2023-10-26]. <https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.mp221215~f3461d7b6e.en.html#:~:text=Key%20ECB%20interest%20rates, The%20Governing%20Council&text=Accordingly%2C%20the%20interest%20rate%20on, effect%20from%2021%20December%202022>.
- [7] A. Kruschwitz L, Loffler A. Introduction: A Stochastic Approach to Discounted Cash Flow [G]//Stochastic discounted cash flow: A theory of the valuation of firms. Cham, Switzerland: Springer, 2020.
- [8] Baker M, Wurgler J. Investor sentiment in the stock market [M]. Cambridge, MA: National Bureau of Economic Research, 2007.
- [9] How do rising interest rates affect the stock market? [EB/OL]. U.S. Bank, 2022-02-16. (2022-02-16) [2023-10-26]. <https://www.usbank.com/investing/financial-perspectives/market-news/how-do-rising-interest-rates-affect-the-stock->

market.html#:~:text=%E2%80%9Cif%20interest%20rates%20move%20higher,yields%20today%2C%E2%80%9D%20says%20Haworth.

- [10] How rising interest rates affect bonds: U.S. Bank [EB/OL]. How Rising Interest Rates Affect Bonds | U.S. Bank, 2022-02-01. (2022-02-01) [2023-10-26]. <https://www.usbank.com/investing/financial-perspectives/market-news/interest-rates-affect-bonds.html>.