

The Transmissive Effect of the Federal Reserve's Interest Rate Hike on China's Government Bond Yields in the Context of the COVID-19 Pandemic

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Abstract. The global economy underwent profound shifts due to the COVID-19 pandemic, bringing monetary policies of major economies, such as the U.S., to the forefront. As the U.S. Federal Reserve's decisions can resonate globally, understanding their ramifications on China's bond market post-COVID-19 becomes paramount. This research delves into the ripple effects of U.S. monetary policy on China's bond market dynamics. Utilizing a mixed methodology, the study incorporates both quantitative and qualitative analyses based on financial records and historical data. Preliminary findings highlight the U.S.'s aggressive monetary responses during the pandemic, and how China's bond market, with high yields, presents a competitive return. Additionally, China's swift economic recovery and robust export figures reinforce its financial resilience. The study further examines the transmission effect of the U.S. Federal Reserve's interest rate policies on China's government bond yields. Ultimately, the research aims to offer comprehensive insights to navigate future economic landscapes in light of global challenges and monetary policies.

Keywords: U.S. Monetary Policy, China's Bond Market, COVID-19 Economic Impact, Federal Reserve Interest Rates, Government Bond Yields.

1. Introduction

The COVID-19 pandemic has significantly impacted the global economy, causing disruptions across various sectors, from halted trade to spikes in unemployment. These challenges have emphasized the importance of monetary policies in influential countries, notably the U.S., in determining worldwide economic paths. The U.S., a major global force, exerts considerable influence on international financial markets [1]. Decisions by the U.S. Federal Reserve can send ripples worldwide, especially given the web of global trade relationships. China, the world's second-largest economy, is notably affected, having made considerable strides in finance and currency internationalization. This research focuses on the repercussions of U.S. monetary policy on China's bond market post-COVID-19. As China endeavours towards interest rate reforms and capital market development, understanding U.S. policy implications becomes vital for its evolving economic landscape. This study aims to provide insights to navigate China's future growth. After this introduction, the paper will further scrutinize relevant literature, methodologies, and findings, ensuring a comprehensive analysis integrating both historical and current global challenges [2].

2. Research Methods and Data Sources

To ensure a comprehensive analysis, this study will employ a mixed methodology approach. While a significant portion of existing literature focuses on the post-2008 financial crisis era, this research aims to incorporate data from the post-pandemic phase to provide a holistic view. Several specialists address those quantitative methods, such as the event study method using high-frequency daily data, will be employed alongside qualitative analyses for a robust understanding of the topic [3]. The primary data sources for this study will include financial records, historical data on bond yields, and official communications from the U.S. Federal Reserve and other relevant institutions [4].

3. Findings & Discussion

3.1. U.S. Monetary Policy in the Context of the COVID-19 Pandemic

This section will detail the tangible effects of the COVID-19 pandemic on the U.S. economy, highlighting production stagnation and unemployment rate surges. It will draw upon the latest data and research findings to explore how these impacts threatened economic stability and growth.

This segment will examine the monetary policy measures adopted by the Federal Reserve during the pandemic, with a particular focus on interest rate cuts and asset purchase programs [5]. The objectives, implementation, and effectiveness of these policies in stabilizing financial markets and fostering economic recovery will be deeply studied. From the outset, one can observe that during the period marked as 'Recession' between 2008 and 2010, the rate underwent a steep decline, bottoming out close to 0%. This drop is indicative of the Federal Reserve's aggressive response to the financial crisis of 2008, aiming to stimulate economic activity by making borrowing cheaper. Post this phase, the rates remained relatively stagnant until around 2015, where people witness a gradual ascent. As addressed by scholars, this upward trend suggests a period of economic recovery and stabilization, where the Federal Reserve incrementally increased rates to ward off inflation while ensuring that the economic growth trajectory wasn't hindered [6].

Come 2020, the onset of the COVID-19 pandemic, there is a pronounced rate cut, bringing the federal funds rate back down near 0%. This decisive move aimed at cushioning the blow dealt by the pandemic, facilitating borrowing, and ensuring liquidity in the market. However, as people advance to 2022 and beyond, a noticeable hike brings the rate to 1.75%, marking the most aggressive rate hike since 1994. This is a significant policy response, possibly indicating the Federal Reserve's intention to curb inflationary pressures or a reflection of the economy's resilience and recovery post-pandemic [7].

3.2. China's Government Bond Market and COVID-19: Characteristics of China's Government Bond Market

As disclosed by scholars, there's a clear narrative about the state of China's government bond market and its economic resilience during turbulent times. The data juxtaposes nominal government bond yields and those hedged to USD across various countries. Remarkably, China's bond yields are visibly higher, even outstripping those of developed economies like the US and Germany, especially over longer durations (10 and 30 years). This suggests that China's government bonds offer competitive returns, likely indicative of international confidence in the country's fiscal health and its ability to meet its obligations. Furthermore, even after hedging risks associated with currency fluctuations, China's bonds appear to be an attractive proposition for investors. Another research indicate that China's robust recovery post the initial COVID-19 outbreak compared to the US and Europe. The Composite Purchasing Managers' Indices (PMI) for China showcases a pronounced V-shaped recovery, signifying a quick rebound. A PMI above 50 typically indicates economic expansion, and China's curve suggests not just a recovery but also an expansion, further underscoring the resilience and robustness of its economy. Correlating these insights with the value of exports from China over the past decade, one can infer the significant role of international trade in bolstering China's economic strengths. A thriving export sector likely bolstered foreign reserves, enhancing the country's ability to manage its fiscal policy, ultimately benefiting the government bond market [8].

3.3. Impact of the Pandemic on China's Economy

The chart presented outlines the export values from China over a span of a decade, from 2012 to 2022. A keen observation of the data paints a nuanced picture of China's economic journey, particularly the resilience it showcased during the pandemic. From 2012 to 2017, the exports remained relatively stable with some fluctuations, hovering around the 2 trillion U.S. dollar mark. However, beginning from 2018 and leading up to 2022, there's a noticeable and consistent upward trajectory. In the thick of the global pandemic, between 2019 to 2020, the export figures still managed

to grow, albeit at a slower pace, from 2,499.48 billion to 2,589.95 billion U.S. dollars. Then, by 2021 and 2022, the exports experienced a more pronounced surge, reaching 3,363.5 and 3,593.6 billion U.S. dollars respectively [9]. The years 2021 and 2022 witnessed a robust bounce back in export figures, indicating not just a recovery but a significant economic boom. This could be a result of pent-up global demand being met by Chinese manufacturers. With a strong export backbone, China's foreign exchange reserves would likely have been fortified. A bolstered foreign exchange reserve often translates into increased confidence in a country's ability to meet its international obligations, enhancing the attractiveness of its government bond market [9].

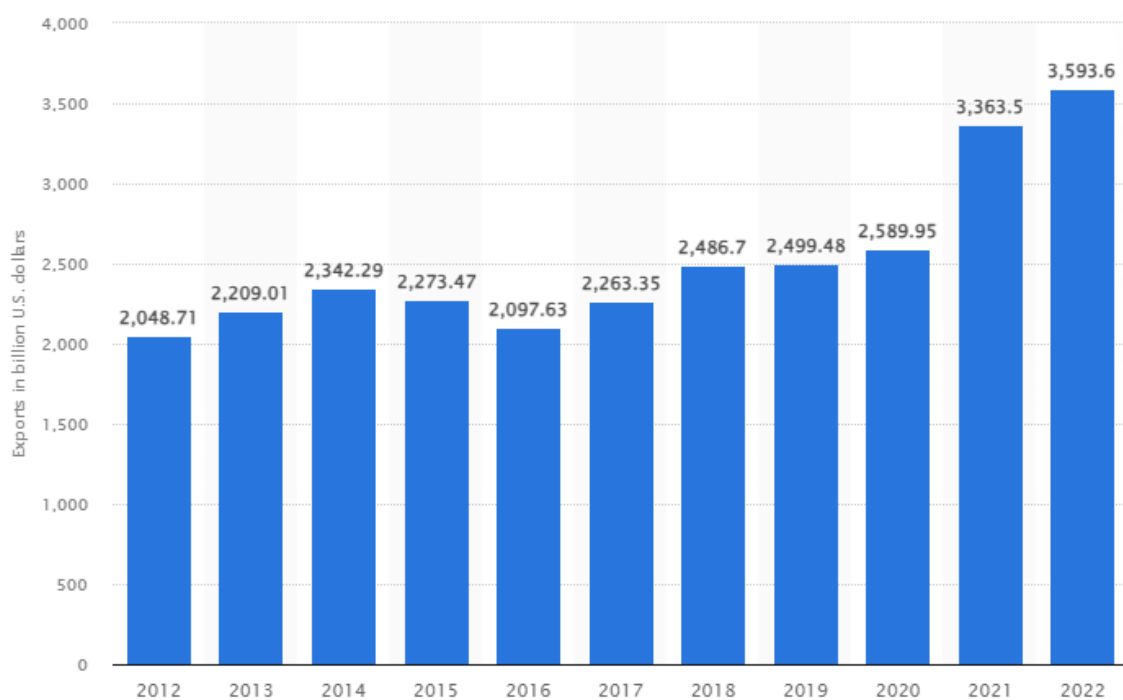


Figure 1. Value of export of goods from China from 2012 to 2022(in billion U.S. dollars)

Data source: <https://www.statista.com/statistics/>

Photo credit: Original

4. Transmission Effect of the Federal Reserve's Interest Rate Hike on China's Government Bond Yields amidst the COVID-19 Pandemic

4.1. The Federal Reserve's Interest Rate Hike Policy

A deep exploration into the backdrop and reasons for the Federal Reserve's interest rate hikes, along with their influence on domestic U.S. financial markets, will lay the groundwork for understanding the transmission mechanism to China's government bond yields. The first graph indicates a volatile phase for the Federal funds target rate between the 1970s and 1980s, peaking close to 20% before eventually plummeting. Such high rates were a response to combat the stagflation of that era [10].



Figure 2. The Fed Raises Rates a Quarter Point and Signals More Ahead

Data source: <https://www.nytimes.com/>

Photo credit: Original

The shaded regions titled "Recessions" highlight the times when the U.S. economy faced downturns. It's evident that during or post these periods, interest rates often reduced, signalling the Federal Reserve's countercyclical approach. The shaded regions titled "Recessions" highlight the times when the U.S. economy faced downturns. It's evident that during or post these periods, interest rates often reduced, signalling the Federal Reserve's countercyclical approach [11].

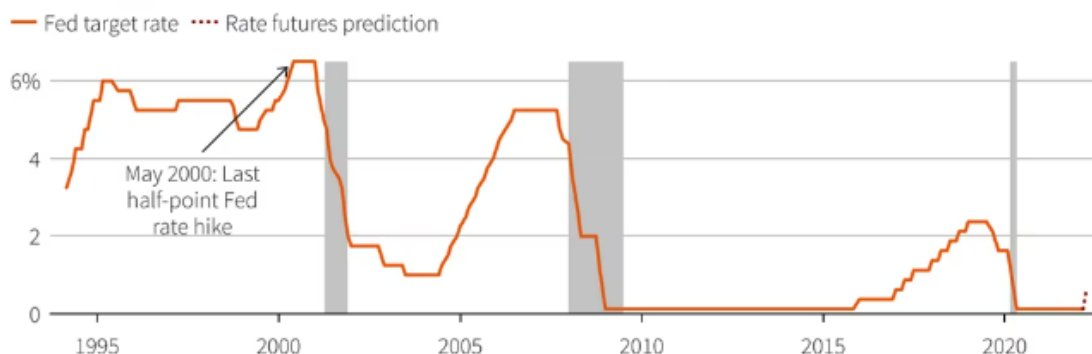


Figure 3. Fed target rate and the rate futures prediction

Data source: <https://www.nytimes.com/>

Photo credit: Original

The second graph contrasts the actual Federal Reserve rate (Fed target rate) against the rate futures prediction. It provides a foresight into market expectations regarding interest rate movements. A key event highlighted is the half-point rate hike in May 2000, marking it as an unusual and aggressive policy move. Stagnation and Decline Post 2008: The aftermath of the 2008 financial crisis is characterized by prolonged low rates. The steady decline well into the 2010s is evident, corroborating the Fed's strategy of ensuring liquidity and promoting economic recovery.

The sharp dip towards the right end reflects the onset of the COVID-19 pandemic, where rates were slashed to stimulate a pandemic-hit economy. The Federal Reserve's interest rate decisions, as deduced from the charts, are highly reactive to economic conditions. Hikes, especially those of significant magnitudes, typically indicate a pre-emptive move against potential inflation or an overheated economy. In contrast, rate cuts, often drastic, are used as tools to spur economic activity during downturns [12]. Given this backdrop, understanding the transmission effect of these rate decisions on China's government bond yields becomes essential. The U.S. economy, being one of the largest and most influential globally, means that its monetary policy decisions can have ripple effects. A hike in U.S. interest rates could potentially attract global capital to U.S. assets for better returns,

which might result in capital outflows from emerging markets like China. This movement can put upward pressure on China's government bond yields [13].

4.2. Changes in China's Government Bond Yields

This segment will address the response of China's government bond yields, encompassing both their initial reactions and long-term implications. An examination of market data and economic indicators will assess the tangible impacts of Federal Reserve policies on China's bond market. The 2022 line showcases an aggressive rate hike trajectory, almost paralleling the sharp incline witnessed in 1983 (Table.1). This signifies that the Federal Reserve is attempting to rapidly counteract inflationary pressures. Comparatively, rate hike patterns from 1999, 2004, and 2015 were more gradual, indicating a more measured response to economic conditions during those periods.

Table 1. Comparing the Speed of Interest Rate Hikes

Time Period	Inflation Rate at Start of Cycle
Mar 1988 - May 1989	3.60% inflation rate at the start of the cycle.
Feb 1994 - Feb 1995	2.06% inflation rate at the start of the cycle.
Jun 1999 - May 2000	1.40% inflation rate at the start of the cycle.
Jun 2004 - Jun 2006	2.89% inflation rate at the start of the cycle.
Dec 2015 - Dec 2018	0.30% inflation rate at the start of the cycle.
Mar 2022 - Sep 2022	6.77% inflation rate at the start of the cycle.

Data source: <https://www.visualcapitalist.com/>

The most recent rate hike in 2022 started at a staggering 6.77% inflation rate, the highest among the listed periods. This could be attributed to various factors, including disruptions caused by the COVID-19 pandemic and supply chain issues. Past rate hikes, such as those in 1988 and 2004, commenced at higher inflation rates (3.60% and 2.89% respectively) compared to 2015's modest 0.30%. As U.S. interest rates influence global currency valuations, they can indirectly impact trade dynamics between the U.S. and China, potentially affecting economic growth and, by extension, bond yields (Table.1).

4.3. Analysis of the Transmission Mechanism

The influence of the Federal Reserve's monetary policies extends beyond the domestic market of the United States. Particularly in the age of globalization, the ramifications of these policies are felt worldwide [13]. In the context of China's government bond market, it's essential to understand how the Federal Reserve's actions can exert influence. In terms of capital flows, when the Federal Reserve adjusts its interest rates, it affects global capital flows. For instance, a hike in U.S. interest rates might attract foreign investment, seeking higher returns. This could lead to a decline in capital flows to emerging markets, including China. As a result, China might experience a sell-off in its bond market, leading to higher yields.

Regarding the international trade, U.S. monetary policy can influence the dollar's value, which, in turn, affects international trade dynamics. A stronger dollar might make Chinese exports cheaper and more attractive, potentially leading to a trade surplus for China. Such dynamics can influence China's foreign reserves and, consequently, its bond market dynamics. Another aspect of the transmission mechanism is regarding the risk perception [14], where the Federal Reserve's policies can shape global risk perceptions. If the U.S. adopts a tightening stance, it might be perceived as a response to domestic inflationary pressures or potential economic downturns. Such perceptions can induce global investors to seek safer assets, including Chinese government bonds, leading to changes in their yields [15].

5. Conclusion

The aftermath of the COVID-19 pandemic has accentuated the profound influences of U.S. monetary policies, especially those of the Federal Reserve, on the global financial arena, with China's bond market standing as a notable exemplar. The U.S. Federal Reserve's countercyclical measures, seen through aggressive rate adjustments during economic shifts, have repercussions far beyond its borders, impacting trade, currency values, and capital flows. China, despite multiple global challenges, showcased remarkable resilience, underpinned by robust exports and strong foreign reserves. However, this resilience underscores necessities for China to be proactive and adaptive, anticipating, and mitigating effects of foreign monetary manoeuvres. As the U.S. continues to be a pivotal global economic influencer, China's emerging economic might and adaptability also make it a central figure in global finance. The interplay between these two economic powerhouses underscores the evolving dynamics of global economic discourse.

For recommendations, Chinese fiscal and monetary authorities should focus on strengthening fiscal discipline to ensure sustainable debt levels by advocating for tax reform to enhance fiscal revenue efficiency and strengthen financial market regulation, ensuring synergy between monetary and fiscal policies. Further promote the internationalization of the renminbi to enhance China's influence in the global financial system. For Chinese and international individual investors, they should emphasize risk management and asset diversification in investment decisions. Last but nevertheless, the Chinese governmental and business entities should consider opportunities in emerging technologies, green energy, and sustainable investments, while staying alert to market dynamics and policy shifts, thus balancing the pursuit of returns with considerations of liquidity and security, developing a long-term and stable investment strategy.

However, in terms of limitations and deficiencies, this research lacks detailed case analyses and doesn't sufficiently explore the practical theory application. Future research should furthermore explore real-world examples to validate the theory's practicality. Additionally, this research should further address recent advancements in related fields, therefore, future studies should focus on integrating new technologies and theories to enhance timeliness and innovation.

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