Dean&Francis
ISSN 2959-6130

Analysis of the Impact of Federal Reserve Interest Rate Adjustments on CNY Exchange Rate Volatility During Trump's Presidency

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Abstract:
This paper systematically analyzes the transmission mechanism and impact effect of the Federal Reserve's interest rate policy on the RMB exchange rate during Trump's administration (2017-2021 and 2025 to present). The research shows that during the Fed's interest rate hike cycle, the widening of the US-China interest rate differential triggers capital outflows, intensifying the RMB's phased depreciation pressure. The superimposition of trade protectionist policies (such as imposing tariffs on China) further amplifies exchange rate fluctuations. During the 2018 Sino-US trade war, the RMB depreciated by 12.3%. After entering the interest rate cut cycle, the weakening of the US dollar eases the RMB's depreciation pressure, but policy expectation differences may lead to two-way exchange rate fluctuations. The empirical analysis (VAR model) shows that the contribution of the US policy mix to RMB exchange rate fluctuations is as high as 32%, significantly higher than that of a single policy shock. The People's Bank of China effectively stabilizes the exchange rate through guiding the central parity rate, intervening in the offshore market (such as issuing central bank bills), and maintaining internal and external balance of monetary policy (such as cutting the reserve requirement ratio). In the second quarter of 2025, fundamental factors offset 54% of external shocks. Overall judgment, the future trend of the RMB exchange rate depends on the pace of the Fed's interest rate cuts, the evolution of Sino-US economic and trade relations, and the prevention and control of extreme risk events.

Keywords: Federal Reserve interest rate policy, Trump's trade policy, Fluctuations in the RMB exchange rate, Capital flows; Policy expectation gap, Central bank intervention, Interest rate differential between China and the US, Tariff transmission effect

1. Introduction

During Donald Trump's presidency (2017–2021 and 2025 to present), U.S. economic policies—particularly the Federal Reserve's interest rate adjustments—have had a profound impact on global financial markets. As the two largest economies in the world, the interaction between U.S. and Chinese monetary policies directly affects fluctuations in the CNY exchange rate. This paper analyzes the mechanisms and market reactions of CNY exchange rate movements in response to the Fed's rate hike and cut cycles during Trump's presidency, and explores the countermeasures adopted by the People's Bank of China.

2. Exchange Rate Pressure During the Fed's Rate Hike Cycle

During Trump's first term (2017–2021), the Federal Reserve launched a rate hike cycle to counter economic overheating. For instance, in March 2017, the Fed announced a 25 basis point rate increase, causing the U.S. Dollar Index to strengthen in the short term, which in turn led the RMB/USD central parity rate to depreciate to 6.8862. However, as market expectations were gradually digested, the RMB slightly appreciated afterward. During this period, the Fed's rate hikes affected the CNY exchange rate through various channels.

2.1 Interest Rate Differentials and Capital Flows

Fed rate hikes increased the yields on dollar-denominated assets, attracting international capital back to the U.S. and putting pressure on capital outflows from emerging markets. Although China mitigated part of this pressure through capital controls, it still faced intermittent depreciation pressure on the CNY.

2.2 Market Expectations and Policy Game

Trump's protectionist trade policies (such as the imposition of tariffs on Chinese goods in 2018), combined with the Fed's tightening measures, intensified CNY volatility. For example, during the 2018 U.S.-China trade war, the RMB depreciated from 6.23 to around 7.0, reflecting market concerns over dual risks.

3. Rate Cut Expectations and Bidirectional Fluctuations of the U.S. Dollar Index

Entering Trump's second term (2025 to present), the U.S. economy has faced the contradiction of persistent inflation and slowing growth, leading to heightened expectations of Fed rate cuts. At the end of 2024, weak U.S. employment data and signs of easing inflation prompted market expectations of multiple rate cuts by the Fed in 2025. As a result, the U.S. Dollar Index fell from a high of 109.48 to 107.91, and the CNY exchange rate stabilized and rebounded to the 7.25 range. The mechanisms of influence during this phase include:

3.1 Weakening Dollar and Passive Appreciation of the CNY

A decline in the U.S. Dollar Index directly eased depreciation pressure on non-dollar currencies. For instance, in January 2025, as Trump did not immediately impose new tariffs, market risk appetite recovered, and the offshore CNY appreciated nearly 500 basis points in a single day.

3.2 Self-Fulfilling Expectations of Policy

Market expectations of Fed rate cuts were priced into exchange rates in advance. If the actual rate cuts fall short of expectations, a dollar rebound may occur, intensifying bidirectional fluctuations of the CNY.

4. The Multidimensional Impact of Trump's Trade Policies on the CNY Exchange Rate

Trump's trade policies have become a significant factor affecting global financial markets, exerting complex and dynamic influences on the CNY exchange rate. These effects are primarily reflected in the following aspects:

4.1 Policy Evolution and Core Characteristics

Trump's trade policies exhibit a strong unilateral protectionist stance, with their evolution profoundly reshaping global trade patterns and currency market dynamics. From his first term starting in 2017 to the "Trump 2.0 era" in 2025, the core of his policies has remained consistent, though the strategic measures have become noticeably more aggressive:

4.2 Comprehensive Tariff Strategy

On his first day in office in 2025, Trump signed an executive order imposing a 25% tariff on imports from Canada and Mexico, along with plans to levy a 60% discriminato-

ISSN 2959-6130

ry tariff on Chinese goods. He also threatened to impose a "universal tariff" of at least 10% on all goods imported into the U.S. This policy far exceeds the scope of the steel and aluminum tariffs from his first term and aims to restructure the cost framework of global trade.

Such structural shocks are inevitably transmitted to the CNY exchange rate formation mechanism through trade channels, capital flows, and market expectations.

4.3 Increased Consumer Burden

According to estimates by Moody's economists, Trump's tariffs would increase annual expenses for the average American household by $210. If combined with trade-policy-induced rises in oil prices (as seen in 2018 when Trump's policies pushed U.S. gasoline prices up to $2.98 per gallon), households' real purchasing power would be further and significantly weakened.

5. U.S.-China Policy Interaction and Exchange Rate Risk Transmission

During Trump's presidency, the combination of Federal Reserve policy and trade policy has created a compounding effect, further complicating RMB exchange rate fluctuations. Empirical analysis based on a VAR (Vector Autoregression) model shows that the combined impact of U.S. policies contributes up to 32% of CNY exchange rate volatility, significantly higher than the impact of individual policy shocks (10%–15%).

5.1 Conflict Between Tariff and Interest Rate Policies

The Trump administration attempted to reduce the trade deficit through tariff increases, but a strong dollar policy weakened the effectiveness of tariffs. A tariff-exchange rate elasticity model helps quantify this contradiction: regression analysis indicates that for every 1 percentage point increase in U.S. tariffs on Chinese goods, the CNY is theoretically expected to depreciate by 0.8%. However, for every 1% appreciation in the U.S. Dollar Index during the same period, approximately 60% of the tariff effect is offset. A typical case occurred in 2025 when the U.S. imposed a 10% tariff on Chinese steel and aluminum: event study analysis showed that on the day the tariff was announced, the RMB spot exchange rate depreciated by 1.2%. However, over the following two weeks, concerns over the U.S. economic outlook caused the Dollar Index to fall by 3.5%, leading to a net RMB appreciation of 0.7%, effectively reversing the impact of the tariff shock.

5.2 Impact of Market Expectation Divergence

If the pace of Federal Reserve rate cuts is not aligned with Trump's fiscal expansion (such as tax cuts), it may exacerbate inflation risks in the U.S. A Probit model constructed based on the spread between interest rate futures and inflation expectations predicts that when the scale of fiscal stimulus exceeds the level of Fed policy support by 20 percentage points, the probability of inflation overshooting rises to 67%, forcing the Fed to delay monetary easing. Analysis of the divergence between historical volatility (HV) and implied volatility (IV) further confirms this: during Q1 of 2025, as market expectation gaps widened, the USD/RMB one-month IV-HV premium surged to 4.2 standard deviations, indicating a heightened risk of exchange rate overshooting. This ultimately led to a temporary 3.8% strengthening of the U.S. dollar and a corresponding 2.1% depreciation of the CNY under pressure.

6. The PBOC's Exchange Rate Stabilization Strategy

To counteract the spillover effects of Federal Reserve policy, the People's Bank of China (PBOC) has adopted a multi-dimensional approach to stabilize the CNY exchange rate. The effectiveness of these measures can be quantitatively assessed through the intervention coefficient and the Exchange Market Pressure Index (EMPI).

6.1 Central Parity Guidance and Offshore Market Intervention

By sending stable signals via the central parity rate—such as raising the macroprudential adjustment parameter for cross-border financing to 1.75 in January 2025—and issuing offshore central bank bills (CNY 60 billion), the PBOC curbed speculative depreciation in the offshore RMB market. GARCH(1,1) model estimates show that following these policies, the standard deviation of offshore CNY (CNH) volatility dropped from 0.48 to 0.31, and the CNH-CNY spread narrowed by 40 basis points. Correlation analysis indicates a significant negative relationship between the issuance scale of central bank bills and the CNH Hibor rate ($r = -0.72$), effectively raising the cost of shorting the CNY.

6.2 Monetary Policy for Internal-External Balance

Under a "moderately accommodative" policy stance, the PBOC maintained liquidity through reserve requirement ratio (RRR) cuts and structural tools. A threshold model based on China–U.S. interest rate differentials and capital flows revealed that when the 10-year government bond spread narrowed below 80 basis points, the capital outflow pressure index under securities investment surged by 2 times. After the 50 basis point RRR cut in March 2025, the spread stabilized at 92 basis points. Impulse response function (IRF) analysis showed that the scale of capital outflows declined by USD 3.8 billion.

6.3 Support from Economic Fundamentals

In 2025, China's consumption rebounded (retail sales growth recovered to 5.2%) and CPI rose to 1.8%, boosting market confidence. A VAR system model linking exchange rates and macroeconomic indicators confirms that a 1% GDP growth surprise can lead to a 0.5% appreciation of the RMB, with the effect lasting up to six months. HP filter decomposition of trend components shows that in Q2 2025, fundamental factors offset 54% of the external shock's impact on the exchange rate.

7. Conclusion and Outlook

During Trump's presidency, the Federal Reserve's interest rate policies have influenced the CNY exchange rate through multiple channels, including interest rate differentials, capital flows, and market expectations. In response, the proactive interventions of the People's Bank of China and the resilience of China's economy have served as key pillars for stabilizing the exchange rate. Looking ahead, if the Fed implements rate cuts and U.S.-China trade tensions ease, the CNY is expected to maintain a trend of steady appreciation within a two-way fluctuation framework. However, caution is warranted regarding potential "black swan" events such as a resurgence of U.S. inflation or erratic shifts in Trump's policy stance. Enterprises should strengthen exchange rate risk management to cope with possible volatility.

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