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Impact of the Federal Reserve's Interest Rate Announcements on the Earnings of US Bank Stocks

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Abstract:

This paper systematically reviews domestic and foreign theoretical and empirical studies on the transmission mechanisms linking monetary policy and interest rate decisions to stock market outcomes, and further investigates the impact of the Federal Reserve's interest rate announcements on U.S. bank stock returns. This paper establishes the theoretical foundation of banks' stock's reaction to the central bank's monetary policy from the aspects of studying the existence of the existing theoretical mechanism and the common market view by including profit structure channels, liability-cost channel, risk-premium channel and expectations management channel. Moreover, it uses the typical policy cycle case of 2024 interest rates downward cut and analyses the differentiated market performance under the different size of the banks, the industrial chain's spillover effect, the short and long-term abnormal returns and value logics of the banks' stocks. This paper intend to use interest rate transmission to offer some reference to investors, and offer some clues for the future research about interest rate transmission and financial risk linkage. By systemically reviewing related literature, the paper distills the conclusions and methods in diverse research perspectives and the status of research outlook as well as research challenges.

Keywords: Monetary policy; federal reserve; bank stocks; abnormal returns; event analysis.

1. Introduction

Background: As a global monetary policy bellwether, the Federal Reserve's interest rate adjustments affect the liquidity and risk appetite of the entire financial market. As a barometer of global monetary policy, the Federal Reserve's interest rate control has always had a profound impact on the global financial market. Since 2022, in order to curb high inflation, the United States has entered the most aggressive interest rate hike cycle in 40 years, which has led to signif-

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icant changes in the capital market, bank balance sheets and financial institutions' risk exposure. When the market began to reprice the possibility of "inflation decline + economic soft landing" in the second half of 2023, the expectation of interest rate cuts rose accordingly, and US bank stocks showed obvious volatility under the drive of multiple policy signals. Literature background: There are existing scholars' analyses of this issue and mainstream views; existing research covers multidimensional analysis of interest rate policy and stock market. For example, Bernanke and Kuttner proposed the "monetary policy surprise" model, which shows that stock price fluctuations are mainly driven by the part of interest rate decisions that is not expected by the market [1]. Subsequent studies have further shown that, because the business model of banks depends on interest rate spreads, liability structure and maturity mismatch, they are significantly more sensitive to interest rate policy than other industries [2]. In recent years, with the increasing application of event study methods in financial market research, more and more literature has begun to focus on the abnormal returns of bank stocks during policy announcement windows. This paper assesses the market's immediate reaction to Federal Reserve (Fed) policies by combining high-frequency data, futures interest rates, and other indicators. The research objectives and significance of this paper include explaining the transmission mechanism of interest rate policy to bank stock returns and providing strategic references for investors to cope with interest rate cycle fluctuations.

The first objective of this paper is to make a systematic review for theoretical mechanisms in which Federal Reserve interest rate policies influence the returns of US bank stocks according the literatures, and then to make case studies on the performance of banking according to typical policy cycles. Through synthesizing the distinctions in asset structure, liability dependence and profit models of banks with different sizes (large banks, mid banks and small community banks), this paper gives the answer of why banks with different sizes have distinct responses to policy shocks. In addition, this paper tries to research the spillover of interest rate policies to the market and other industries. It seeks to know the interest rate transmission from an overall angle.

2. Federal Reserve Interest Rate Policy Classification and Typical Cycle Analysis

2.1 Policy Type Classification

Given its prominence in the world economy, the Federal Reserve's monetary policy actions through interest rates affect capital prices, consumer spending, and investment spending in the US, and beyond through capital flows and movements in the exchange rates. Existing literature demonstrates that the interest rate policies have a greater impact on bank stocks because the core of banking business model is the maturity mismatch, net interest margin and balance sheet re-allocation. In order to systematically grasp how the interest rate policy impacts the bank stock return, this section first summarizes the types of policies, and then takes the typical case of 2024 expected interest rate cut cycle as a joint, and studies the transmission logic of the changes of policy expectation on the bank stock price through typical case study.

In terms of policy types, Fed's interest rate policies can be classified into two major types: convention policies and non-conventional policies. Convention policies are mainly increasing interest rate, cutting interest rate, maintaining interest rate between a specific level, etc. , while the non-conventional policies are mainly large-scale Quantitative Easing (QE) and Quantitative Tightening (QT). Secondly, the fed adopts forward guidance recently as part of the US Federal Reserve policy package in order to sway market expectations, and the Fed increases the interest rate mostly when there is an inflationary or overheated economy. Previous research finds that interest rate increases will increase funding costs for banks in the short run and increase loan rates at the same time, resulting in increasing net interest margins. The large banks with more diversified asset structures will be more flexible in interest rate hike environment, and show greater forward-return responses. But fast interest-rate hike cycles also have great risks, if the banks have long-term assets, the values of the long-term holding bonds will be dropped which in turn will squeeze the banking capital adequacy ratio and thus create an enhanced systemic risk [3,4].

Conversely to interest rate hikes, interest rate cuts are generally seen as a tool to stimulate the economy. Lower interest rates reduce financing costs, which benefits borrowing activities by businesses and households, promoting economic expansion, but can compress banks' net interest margins. Literature suggests that the short-term impact of interest rate cut cycles on banks is often negative, as deposit rates typically decline more slowly than loan rates, leading to a narrowing of interest rate spreads. However, in the long run, interest rate cuts will stimulate loan demand and asset trading markets, thereby improving banks' credit quality and future profit expectations, and may even have neutral or positive effects [5,6]. Keeping interest rates unchanged usually means that there is still some degree of uncertainty in the market. Investors tend to judge the future path of interest rates from changes in the

wording of policy statements and summary of economic projections (SEP). Expressions such as "long-term high" usually have a positive impact on bank stocks because it means that the spread range, which is the most important part of the profit structure, may remain at a relatively high level for a long period of time [7].

Unconventional policies play a key role in special economic environments. For example, during a financial crisis or recession, the Federal Reserve may implement quantitative easing to lower long-term interest rates by purchasing long-term Treasury bonds and mortgage-backed securities (MBS). This policy has boosted bank asset prices in the short term, but has compressed banks' interest rate spreads. Meanwhile, balance sheet reduction policies may raise short-term interest rates and improve banks' short-term interest rate spreads, but have brought some uncertainty to liquidity. In recent years, forward guidance has become increasingly important in the policy system. Studies have shown that a considerable proportion of bank stocks' reactions to interest rate policies are due to unexpected policy factors rather than changes in interest rates themselves. Unexpected elements in hawkish or dovish rhetoric often have a significant impact on bank returns in the short term [8].

2.2 Typical Cycle Case Analysis

In order to specifically show the effect of policy expectation on the bank stock returns. This chapter takes the cycle of the 2024 cut of interest rate increase expectation as an example.In the USA, from 2022 to 2023, the Federal Reserve enacted the most aggressive cycle of interest rate hikes in nearly 40 years. The Federal Reserve raised interest rates in total of 525 basis points, increasing the funding cost to the highest level in 20 years. However, inflation has declined substantially from its 2022 peak (above 9%) to around 3%, which strengthened market expectations of a 2024 rate-cut cycle. A little after the outbreak, market expectation of interest cut accelerated strongly, and reached around 1% to 3% by the middle of 2020. This reflects how the expectation of interest cut sharply started to shape in the beginning of 2020. Early in 2021, people observed that the market had already started expecting the Federal Reserve would cut the interest rate in 2024. According to the Chicago Mercantile Exchange (CME) FedWatch, the market had a rather clear expectation that the Federal Reserve would cut the interest rate by at least 125 to 150 bps in 2024. In this background, the bank stocks embarked on structural recovery, and the risk appetite recovered especially led the large bank stocks' outstanding return. Data released by FactSet indicates that from January of last year till the end of March this year, the stocks of the large bank including JPMorgan Chase, Bank of America and Wells Fargo, increased from 12% to 18% , largely beating the mid-sized region banks and small community banks. It is significantly consistent with the literature on the role of bank heterogeneity: big banks enjoy non-interest income, wealth management and investment banking business, and respond more to the expectation of economic recovery while small banks are largely influenced by local economic environment and deposit shifter as they have relatively simple profit pattern, and are insensitive to the policy expectation.

In terms of event study technique, the performance in the policy announcement window better represents the instant response of the market to the surprise in policy. For the illustration, take the March meeting of Federal Open Market Committee (FOMC) in 2024. Despite the interest rate keeping unchanged, the dot plot indicated "Three rate cuts in 2024", whereas the expectation from the market was only one two rate cuts. Then people call it "dovish surprise". "During the event window (-1 day to +1 day), the cumulative abnormal return (CAR) for large banks was 3% - 5%, for medium banks it was 1% - 3%, and for small banks it was almost unchanged. The result is consistent with findings of Kuttner and Kim, this result also suggests that the stock market is highly responsive to the unexpected part of policy and that bank stocks (an interest rate sensitive sector) responds more directly [9,10].

In sum, the interest rate cut cycle in 2024 will develop into a period of three steps. Among them, the first step is the "expectation formation period", when the market gradually expects further rate cuts with the weakening inflation and enhanced soft-landing probability. Bank stocks see rise with further strong expectations. The second step is the "expectation correction period". In the "strong hiring data and strong economy expectations" period, interest rates are not expected to be cut, and bank stocks experience a selling-off trend. The third phase is "expectation implementation period". If the Fed eventually starts cutting rates, bank stocks will bear short-term pressure for their decreased interest rate spread but a long-term credit risk decline may bring them on an up turn. The logic of these three phases differs from each other showing that the policy sensitivity of the bank stocks is not only predetermined by the level of interest rates, but is also limited by market risk appetite, level of economic activity, and variation of bank business models according to size.

3. Bank Heterogeneity and Differences in Policy Impact

Therefore, the influence of the Federal Reserve interest

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rate policy on bank stock returns is not only related to the direction of policy, but also lies in the big differences of banks' internal business operation framework, balance sheet traits, and business models. Thus, the influence of interest rate cut expectations or change on bank stocks must give a more detailed exposition based on banks' heterogeneity. People have also seen that the varying degree of interest rate sensitivity, risk exposure, profit sources and market expectation among the large banks, medium-sized regional banks and small community banks explains their significantly different return performance with the same policy shocks, which has been repeatedly highlighted in recent literature. In addition, the effect of interest rate policy is not limited to the banking industry but also transmitted to a broader market and industry via the channels of financial condition, credit supply and dollar liquidity. In view of this, this chapter will conduct a systematical analysis of the interest rate policy shock transmission channels from the three aspects of banks, market and other industry.

3.1 Bank

First, from the viewpoint of banks themselves, large banks have very diverse business models, which is the most outstanding feature of heterogeneity among large banks. The large banks own massive customers, a broad global business presence, diversified income source in many aspects, including commercial banking, investment banking, wealth management, and asset custody. Under the rising or high interest rate environment, the net interest margin of the big banks in general rises quickly owing to that the repricing speed on the asset side of the net interest margin is faster compared to the liability side of the net interest margin, and the high customer stickiness of deposit funding source make deposit rate raise slower. It can especially be well-exemplified in the interest rate hike cycle after 2022-2023: major banks like JP-Morgan Chase, Bank of America have seen their record high net interest income. But the response to policy is more "expectation driven" for large banks under an environment of increasing expectation of interest rate cuts. On one hand, expectations of interest rate cuts signal better future economic activities and subsequent demand of loans, transaction in investment banking and wealth management business, etc. On the other hand, large banks have relatively short duration of assets. A rate-cutting environment will hike up the valuation of their securities portfolios and lower the market volatility risk. Thus during the period when there were strong anticipations of interest rates cutting (early 2024) , the stock return of large banks was much better than that of other types of banks, which is extremely consistent with the description in the literature that large banks are "more sensitive to macro policies and react faster" [11].

By contrast, because profit composition of regional mid-sized banks is dominated by traditional deposit and loan services, profit of mid-sized banks' profit is more responsive to interest rate spread movement. Interest rate spread of mid-sized banks will be enhanced after interest rates rise. The direct impact brought by fluctuation of interest rates on interest rate spreads of mid-sized banks is much greater. Concurrently, the clientele of mid-sized banks is usually more concentration in some regions and industrial sectors, i. e. , credit risk exposures are also more regional, for instance, the 2023 Silicon Valley banking crisis, because regional banks with serious asset maturity mismatches and customer over concentration suffered more during interest rate shocks. For mid-sized banks, they also returned partly after the bank expected interest rate cut cycle began at 2024. However, it had a significantly low growth rate when compared with that of big banks. This is due to the fact that interest rate cut might have an adverse effect on them, because mid-sized banks have narrower interest rate spreads at a faster pace than those of big banks. Also, owing to their one-source of income, it is hard for them to make up the negative impact of interest rate spread shrinkage with the help of fee income or investment. Accordingly, their reaction to the news of interest rate cut is generally "positive in short-term and cautious in long-term" in the nature.

However, small community banks which are totally different from the two kinds of banks described above. Their business is strongly local and their asset size is very small. Their customer is large number of small- to medium-sized enterprises and local residents, and they depends on longterm related loans as a business. Small bank deposits are rigid on the liability side and thus their liability cost increases less sharply in interest rate hiking cycles, and declines less sharply in interest rate cut cycles. Consequently they are less responsive to macro policy interest rates to achieve flat interest rate spreads. That provides small banks a relative stability against macro interest rate movements, but also limits strong up support from interest rate cut expectation to their stock prices. Market information in the long interest rate reduction timing of 2024 indicates that the growth rate of SMEs in SME banks is substantially smaller than that of Medium and Large (hereinafter referred to as M3) in medium and large banks, and this result is strongly consistent with its relatively low interest rate response established by its profit structure. The literature demonstrates that the small banks have a slow response is not caused by the poor market pricing efficiency, but their focus of business is relationship loans and local credit risk. The transmission path of the interest

rate policy has a more indirect effect on such kinds of banks [12].

3.2 Market

Besides comparing the heterogeneity of banks, need to further investigate how interest rate policy is going to affect the overall market. As an important factor of macro economy financial environment, interest rate policy will impact directly the market expected reward and risk appetite, the capital pricing mechanism and the asset pricing mechanism etc [13]. Forward estimates of cuts in interest rates result in a reduction in long rates and a general increase in market valuations (most favorable for growth stocks, tech sector and expensive companies). Paralleling the declining discount rate for future cash flows, the equity risk premium also contracts, incentivizing a greater appetite for riskier portfolios on the part of investors. For the banking industry, such an improvement in its risk appetite is in general partially offsetting the adverse influence of interest rate cuts to its interest margin, which is why the stock price of banks still returned overall in the first 2024 with the market increasing its interest cut expectations. Or the stock return of banks is not only related with its fundamental profit structuring but also with the general risk appetite of the market.

3.3 Other Industries

Third, interest rate policy also affects other industries, inducing cascading impacts among industries (i. e. , cross-industry ripple effects). For instance, the industries facing directly positive impacts from interest rate cuts with respect to revaluation under interest rate cuts include the real estate industries, capital-intensive industries, and insurance firms, and pension asset management companies may experience negative impacts resulting from falling long-term yields. Second, technology and high growth sectors are positively impacted by the interest rate cutting cycles given their negative cash flows, and which also might lead to the flows of market funds across industries, thereby influencing the relative stock returns in bank sector as an indirect consequence. The interest rate policies affect the market by various channels, so the bank stock market return is not only a function of industry fundamentals, but also involves asset allocation behavior of investors, and the deviation of competitive return of other industries [14].

In summary, the heterogeneity of banks makes different size banks facing the effects of the interest rate policy with entirely different degrees of sensitivity, and the variation of macroeconomic expectation and risk appetite level in the market market levels, will further strengthen or dampen the above effects. The cross-industry spillover effect of the interest rate policy put bank stock performance in more complicated system environment. It is important to be aware of the differences between these in order to interpret correctly the effects of the interest rate policy and for a richer explanatory framework of the transmission studies.

4. Conclusion

This paper provides a comprehensive review and discussion of the interplay between the Federal Reserve's interest rate policy and bank stock returns, showing how the type of the interest rate policy, market reactions to the policy, bank heterogeneity, and normal policy cycle all determine bank stock performance at various granularities. This paper suggests that Fed's policy interest rates do not move bank stocks through the interest rate spread channel exclusively but through other channels, such as the interest rate spread channel, asset valuation adjustment channel, change in risk attitude channel and credit cycle channel. Response of bank stock depends at the same time on policy's sign (policy hike or cut) , degree of policy surprise and degree of market's expectations for future economic condition. Secondly, the influence of policy interest rate has the phased effects. For instance, on the expected interest rate reduction cycle of 2024, the design, adjustment and realization of policy expectations bring out diverse kinds of income. Moreover, the market also shows its consciousness against policy surprise and it proves the event study method to have a good effect on interpreting policy shocks. To conclude, this Fed's capacity of shaping policy expectations is what has transformed into a new key input of the pricing system of today's financial markets, which might be far more important than a quantitative shift in interest rate levels.

Conversely, when the heterogeneity of banks are large, policy transmission effect is not even. Large banks (large types) have diversified business model, small average duration of assets and large risk diversification ability, so they have more rigidities and less risks faced with policy shocks. Medium-sized banks (small types) have dense profit business model, average duration of assets are large, so they are more susceptible with policy cycle. In contrast, regional banks, those with more localized operation and greater stability in liability source, are found to respond less significantly to movements in rates, while interest rate policy also have externalities toward other sectors through market risk appetite and cost of funding, indirectly contributing to relative return of bank's stocks. Thus, it is significant to judge the direction and strength of policy shocks in real investment and regulatory analysis by rec-

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ognizing the structural differences of banks. In future research, can further consider high frequency data, bank micro-business indicators and cross-market policy spillover effects for a detailed quantitative analysis of the process of policy transmission. It can also analyze the relationship between the central bank policy and banking systems of each country under an international comparison. In a nutshell, the interest rate policy of the Federal Reserve will remain a powerful factor affecting bank stock returns and other financial market.

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