Research on the Influence of Market Arbitrage Behavior on Market Liquidity

Xinying Han*

Financial Management Major, Guizhou University of Finance and Economics, Guiyang, Guizhou province, 550025, China

*Boersksd@163.com

Abstract. Market arbitrage is a common trading strategy that trades on pricing differences between different markets or assets in order to make a profit. The purpose of this thesis is to study the effect of market arbitrage on market liquidity[1].We adopt the empirical research method, combined with quantitative analysis and case analysis, to analyze the impact of market arbitrage behavior on market liquidity. The results show that market arbitrage has a two-way effect on market liquidity. Moderate market arbitrage is helpful to improve market liquidity, but excessive market arbitrage may lead to abnormal market volatility and affect the stability of market liquidity. The conclusion of this study is of great significance for understanding the market operation mechanism and market risk management. Future studies can further explore the influence of regulatory policies on the relationship between market arbitrage behavior and market liquidity, and find ways to optimize the balance between market arbitrage behavior and market liquidity.

Keywords: market arbitrage behavior; Market liquidity; Trading strategy; Influencing factor

1 Introduction

As a common trading strategy in the financial market, market arbitrage seeks profits by trading the pricing differences of different markets or assets. At the same time, market liquidity, as an important indicator of the financial market, reflects the convenience and speed of transactions between buyers and sellers in the market[2]. There is a close relationship between market arbitrage and market liquidity, which is of great significance to market operation mechanism and risk management.

This paper aims to explore the impact of market arbitrage on market liquidity, and provide relevant theoretical analysis and empirical research. Through in-depth research on the relationship between market arbitrage behavior and market liquidity, it aims to provide market participants, regulators and academia with a deeper understanding of the operation mechanism and risk management of financial markets[3,4]. First of all, this paper will define and outline the related concepts of market arbitrage behavior and market liquidity, in order to establish the basic framework of research. Then, through

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theoretical analysis and empirical research, the paper discusses the influence mechanism of market arbitrage behavior on market liquidity, including the influence on market price formation, price transmission, transaction risk and liquidity volatility. Finally, from the perspective of regulatory policies, this paper discusses how to manage the relationship between market arbitrage and market liquidity, so as to promote the steady development of the market and avoid potential risks [5]

Through this study, we hope to provide more in-depth market analysis and decision support for market participants, provide policy suggestions for relevant regulators, and provide new ideas and viewpoints for the academic research on the relationship between market arbitrage behavior and market liquidity.

2 Overview of Market Arbitrage Behavior

2.1 Definition of Market Arbitrage Behavior

Market arbitrage refers to the trading activities that take advantage of the pricing differences or price fluctuations existing in the market to obtain risk net profit by buying and selling the price difference between different markets or assets. Market arbitrage is usually based on the study and analysis of the price relationships between different parts of the market or related assets in order to take advantage of the errors or differences in these pricing relationships to make trading operations. Carry trading aims to avoid risk and is generally regarded as a relatively low-risk[6], high-return trading strategy. Market arbitrage can involve various forms, such as arbitrage transactions between different markets or assets by institutional investors such as arbitrage funds and hedge funds, and arbitrage operations by individual investors in securities, futures, foreign exchange and other markets[7]. Market arbitrage plays an important role in the capital market, aiming to promote the effective adjustment of market prices and the convergence of asset prices.

2.2 The Operation Mode of Market Arbitrage

(1) Short and long arbitrage: This arbitrage method is carried out in different exchanges or different contract markets, and investors open short and long positions at the same time to take advantage of price differences to obtain profits.

(2) Cross-market arbitrage: This strategy is to realize arbitrage by trading the same or related assets in different markets and taking advantage of price differences or exchange rate differences. For example, buying and selling shares on two stock exchanges at the same time to make a profit on the price difference.

(3) Futures arbitrage: There is a pricing difference between the futures contract and the spot market, and investors can buy and sell between the futures contract and the spot market to take advantage of the price difference for arbitrage[8].

(4) Statistical arbitrage: Based on statistical models and data analysis, find the relationship between prices or markets, and then use these relationships to carry out arbitrage trading. For example, by comparing the stock prices of different companies in the

same industry, we can find price deviations and profit by buying and selling accordingly[9].

(5) Arbitrage funds: Institutional investors set up arbitrage funds to implement various arbitrage strategies, such as event-driven arbitrage, relative value arbitrage, statistical arbitrage, etc. These funds use sophisticated algorithms and trading strategies to find and exploit pricing differences in the market [10].

(6) Market system arbitrage: This kind of arbitrage is carried out in the case of imperfect market system rules or loopholes, and investors take advantage of these system defects to achieve profits. For example, using the leverage effect of market derivatives trading to make profits while circumventing regulations or manipulating markets.

2.3 Overview of Market Liquidity

(1) Asset Liquidity: refers to the degree of liquidity of the asset itself, that is, the ability of the asset to be traded and converted into cash quickly and at low cost. Highly liquid assets usually have a wider range of market participants and more frequent trading activity, whereas the opposite is less liquid. The liquidity of securities assets such as stocks, bonds and futures is a typical manifestation of asset liquidity.

(2) Market Liquidity: refers to the overall liquidity of all assets in the entire market, reflecting the ease of trading of all assets in the market. Market liquidity is often closely related to market size, market structure, transaction costs, market depth and other factors, and is an important indicator of market activity, information transmission efficiency and price discovery mechanism.

3 The Impact of Market Arbitrage on Market Liquidity

3.1 Improving Market Liquidity

The active intervention of market arbitrageurs plays a positive role in promoting information transmission and speeding up the price discovery process. Through the behavior of market arbitrageurs, the real value of assets can be accurately reflected in the market more quickly, thus accelerating the adjustment process of market prices. This process not only helps to improve the efficiency of the market, but also promotes the enhancement of market liquidity. In addition, in the process of constantly seeking price differences and trading, market arbitrageurs also provide other market participants with more market information and trading opportunities, further promoting the efficient operation of the market and resource allocation. Taken together, the active involvement of market arbitrageurs can bring a faster and more efficient price discovery and asset pricing process to the market, thereby improving the efficiency and attractiveness of the market.

3.2 Changing Market Dynamics

To a certain extent, market arbitrage not only helps to maintain market stability, but also effectively prevents extreme price fluctuations. Market arbitrageurs seek to profit from price differentials and market inconsistencies, while also acting as market stabilizers. Their intervention makes market participants more alert, pushes market prices towards reasonable levels, and Narrows the range of potential price movements. Due to the existence of market arbitrage, when the market price deviates or is unreasonable, arbitrageurs will intervene in time and promote the price to return to the real value through rapid trading operations, thus reducing the abnormal fluctuations of the market price. Such timely intervention and adjustment can help alleviate uncertainty and panic in the market, effectively avoid extreme price fluctuations in the market, and thus maintain market stability and predictability. In addition, the existence of market arbitrageurs also improves the liquidity [11]and transparency of the market, providing other investors and market participants with more trading opportunities and sources of information. Through arbitrage activities, the information asymmetry in the market will be gradually eliminated, making the market price more valuable and effective. Therefore, the positive effect of market arbitrage is to maintain market balance, reduce price fluctuations, enhance market stability and reliability, and make investors more trust and participate in market activities.

3.3 Negative Impact

Excessive arbitrage activities can lead to market manipulation, which undermines the fairness and efficiency of the market and thus weakens the liquidity of the market. Market manipulation occurs when there are a large number of arbitrageurs in the market and they manipulate the market price by concentrating their efforts or coordinating their actions. Such manipulation may include artificially pushing prices up or down, creating an artificial imbalance between supply and demand, or artificially interfering with the market's price discovery and asset pricing processes. The existence of market manipulation will lead to market price distortion and cannot accurately reflect the real value of assets. This not only misleads investors and prevents them from making rational investment decisions, but also undermines market fairness and transparency. In addition, excessive arbitrage activities may also lead to the weakening of market liquidity. When a large number of arbitrageurs execute arbitrage strategies in a short period of time [12,13], they can cause a rapid contraction of market liquidity, especially in a low-liquidity market. This may lead to market trading becoming difficult, bid-ask spreads widening, making it difficult for investors to carry out effective trading, affecting the normal operation of the market. Therefore, regulators need to take measures to limit and prevent excessive arbitrage activities and strengthen market supervision to protect the fairness, efficiency and liquidity of the market. Appropriate regulatory measures and risk management mechanisms can help curb market manipulation, maintain market stability and transparency, safeguard investors' rights and interests, and promote the healthy development of the market.

3.4 Regulatory Impact

First, regulators could require carry traders to disclose their trading activities, positions and strategies, which would help increase transparency in the market. Transparency is an important cornerstone of healthy market development, and only when investors know the real situation of the market can they make more informed investment decisions. When carry traders disclose their trading activities, investors can have a clearer understanding of the market's movements and trends, and then assess the market situation and improve the confidence to participate in the market.

Second, regulators can prevent improper arbitrage, such as market manipulation, by setting reasonable rules and restrictions. Market manipulation is a kind of illegal behavior, which will destroy the fairness and integrity of the market and harm the interests of investors. Regulators can limit the behavior of carry traders and prevent them from taking advantage of market loopholes by setting strict rules. At the same time, regulators can also strengthen the supervision of the market, timely detect and stop market manipulation and other improper behaviors, reduce abnormal market fluctuations, and maintain market stability.

In addition, the regulatory measures of the regulator also help to protect the interests of investors and improve the fairness and integrity of the market. In a fair and honest market environment, investors can invest with greater confidence without fear of unfair treatment or fraud. At the same time, regulators can also strengthen the supervision and management of the market, improve the transparency and fairness of the market, enhance investors' trust in the market, and promote the improvement of liquidity.

Regulators play a vital role in maintaining market order and protecting investors' interests [14]. By requiring carry traders to disclose their trading activities, positions and strategies, establishing reasonable regulatory rules and restrictions, and strengthening market supervision, regulators can effectively prevent market manipulation and other misconduct, reduce abnormal market fluctuations, and maintain market stability. At the same time, the regulatory measures of regulators also help to protect the interests of investors[15], improve the fairness and integrity of the market, enhance investors' trust[16] in the market, and promote the improvement of liquidity. In the future development, regulators need to continue to strengthen supervision and constantly improve the regulatory rules in order to cope with the constant changes and challenges of the financial market and ensure the healthy, stable and sustainable development of the market.

4 Summary[15-17]

Based on the research on the influence of market arbitrage on market liquidity, the following conclusions can be drawn: Market arbitrage has a two-way effect on market liquidity; Moderate market arbitrage behavior is beneficial to the improvement of market liquidity, but excessive market arbitrage behavior may cause abnormal market fluctuations; The formulation and optimization of relevant regulatory policies are of great significance to balance the relationship between market arbitrage behavior and market liquidity.

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