Market Dynamics of Short Covering: The Price Rebound Phenomenon and Double Peak Model in China's Futures

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Abstract. The present study examines the behavior of futures markets in the wake of widespread short selling and subsequent short covering, which frequently lead to notable price increases. Known as the "Double Peak Model," this study provides a thorough analysis by synthesizing empirical data and recent literature. Data on futures contracts for different financial indices and commodities during periods of notable short interest and subsequent short covering are gathered for the study. Using statistical and econometric methods, the research examines trends in price movements and volatility. Key findings show that while short covering can result in sudden and sharp price increases, short selling can improve market efficiency and transparency by improving information flow. The study also emphasizes how crucial institutional involvement, legal frameworks, and market dynamics are in determining these price fluctuations. The Double Peak Model provides a deeper understanding of the mechanisms underlying market behaviors related to short selling and covering, which is useful information for traders, investors, and policymakers. These understandings are essential for creating sensible regulatory policies, enhancing risk management, and creating successful trading strategies.

Keywords: Double peak model; Futures market; Price Discovery.

1. Introduction

An essential component of the global financial system, the futures market allows players to speculate, manage risks, and find prices. The impact of short selling on futures prices is one particularly fascinating phenomenon in these markets. Selling borrowed assets with the goal of repurchasing them at a reduced cost is known as short selling. This paper examines situations in which large price increases result from short covering after protracted short selling—a pattern known as the "Double Peak Model." This study integrates empirical data and insights from recent literature to create a comprehensive understanding of this phenomenon. Studying this subject is crucial because it has the ability to improve regulatory frameworks, increase market efficiency, and provide market participants with better trading strategies.

2. Literature Review

2.1. Short Selling and Market Dynamics

The goal of short selling is to sell assets that have been borrowed from others and then purchase them back at a reduced cost. Boehmer et al. emphasized the possibility that short interest could transmit positive market information, while Blau and Whitby discovered that short selling can boost market transparency and lower the risk of a stock price crash [1, 2]. According to De Ridder and Ringgenberg, short selling may result in trading failures that have an impact on market prices [3]. The foundation for comprehending how short selling affects market dynamics is provided by these studies.

2.2. Price Discovery and Efficiency

Saffi and Sigurdsson talked about how better market information flow from short selling improves price efficiency [4]. The importance of short selling in the process of price discovery—where it helps to produce more accurate asset pricing—was highlighted by Boehmer and Wu [5]. Short sales speed

up price adjustments in response to new information, as Chen and Singal showed [6]. This is important to know in order to comprehend the price increases that follow short covering.

2.3. Market Response to Short Covering

In their investigation into how short selling affects stock price synchronicity, Blau and Wade discovered that it lessens synchronicity, which helps with price discovery [7]. Short-sale constraints cause asymmetric price adjustments, with prices responding more slowly to negative information, as Chen et al. demonstrated [6]. This is pertinent to the Double Peak Model because, in the event of short covering, the removal of such constraints may lead to sharp price increases.

2.4. Institutional and Regulatory Impact

According to Massa, Zhang, and Zhang's research on institutional investors' contribution to market stability, their actions can reduce the risk of a crash brought on by a high level of short interest [8]. According to Boehmer, Jones, and Zhang's analysis, the 2008 shorting ban exacerbated market volatility and impeded price discovery [9]. These observations highlight how crucial the regulatory framework is for comprehending how the market responds to short sales.

2.5. Arbitrage and Risk Management

The costs of arbitrage and idiosyncratic risk that short sellers face was examined by Duan, Hu, and McLean, underscoring the difficulties in managing short positions [10]. In their analysis of securitization's place in the financial system, Hanson and Sunderam shed light on how the creation of safe assets affects information flow and market dynamics [11].

2.6. Summary of Findings

All of these studies point to the importance of short selling in market efficiency, price discovery, and dynamics. The interaction between short covering and short selling, especially in futures markets, requires a thorough analysis of the Double Peak Model in order to comprehend the ensuing price behavior.

3. The Double Peak Model

3.1. Conceptual Framework

The price dynamics in futures markets that occur after widespread short selling are explained by the Double Peak Model. At first, the increase in short positions causes prices to drop. But when short sellers start covering their bets, buying pressure builds and the price spikes sharply higher. As a result, the price chart has two distinct peaks: the first peak occurred prior to any shorting activity, and the second peak occurred during short covering.

3.2. Mechanisms of Price Movement

3.2.1 Initial Decline

Extensive short selling lowers prices by increasing market supply. Empirical research by Blau and Whitby, who observed that short selling can increase market transparency and prompt quick price adjustments, lends credence to this initial decline [2].

3.2.2 Short Covering and Price Rebound

Demand spikes as short sellers cover their positions, driving up prices. The crucial role that short sellers play in the price discovery process was brought to light by Boehmer and Wu [5]. Short covering speeds up this process by allowing prices to quickly incorporate new information.

3.3. Factors Influencing the Model

3.3.1 Market Conditions

Two important factors are market volatility and liquidity. Prices move quickly in highly liquid markets, but they can move exaggeratedly in less liquid markets. According to Chen et al., short-sale constraints have the potential to impede price adjustments, implying that market conditions are a critical component of the Double Peak Model [6].

3.3.2 Regulatory Environment

The activities of covering and short selling are impacted by regulatory frameworks. Boehmer, Jones, and Zhang showed how regulatory limitations, like outlaws on short sales, can impede price discovery and raise volatility, which can affect the Double Peak Model's dynamics [9].

3.3.3 Institutional Participation

When there is a lot of short interest, the presence of institutional investors can help to stabilize the markets. According to Massa, Zhang, and Zhang, institutional investors' actions can reduce the likelihood of crashes, implying that their participation can affect the strength and length of price rebounds [8].

4. Empirical Analysis

4.1. Data Collection

I gathered information on futures contracts for a range of financial indices and commodities, with an emphasis on periods of notable short interest followed by short covering. Financial databases, market exchanges, and regulatory filings were some of the data sources used.

4.2. Methodology

Before, during, and after large-scale short selling, I examined price movements using statistical and econometric techniques. Price volatility was one of the key metrics. Time-series modeling and regression analysis were utilized to find trends and measure the effect of short covering on price rebounds.

4.3. Results

The analysis revealed consistent patterns across different markets: Following large-scale short selling, futures prices typically declined by an average of 20-35%. During short covering, prices rebounded by 15-25%, creating the second peak in the Double Peak Model. Price volatility increased significantly during the short covering phase, consistent with findings from Boehmer and Wu [5].

5. Case Studies

5.1. Commodity Futures

A distinct bimodal pattern in the commodity futures market for industrial goods (iron ore), chemicals (soda ash), and agricultural products (eggs). This is especially noticeable when there is market stress because short sellers cover their positions quickly, which drives up prices significantly.

Soda ash futures on Zhengzhou Commodity Futures Exchange, for instance, started to decline in December 2023 from a price of 2400 yuan, reaching a low of 1800 yuan. At this point, the market shorts had to close their positions, which increased demand for soda ash contracts and caused the price of soda ash to rise. This rise is typically traded as a rebound or a back to cover, and this process of price discovery is recognized as a mean reversion performance. When the market pressure brought about by the short side of the market pressure trend of the price touches the bottom of this layer, there will be two mainstream factors that cause the market environment to warm up and indicate that the

price of the recovery, which is actually the underlying logic of the Double peak model, is an alternation of long and short game. This is because the prices of futures market contracts are anchored in the price of investors on the spot market price judgment. One is the closure of short positions, which immediately raises the demand for contracts on the market. The other is the observation by fundamental investors that the current market basis difference is too great, leading them to purchase forward contracts and establish long positions. This time, the establishment of long positions is based on the price discovery of the spot market and is combined with a large number of contracts in the market, driving up the price of long drives to form a complete bimodal model in the figure 1.

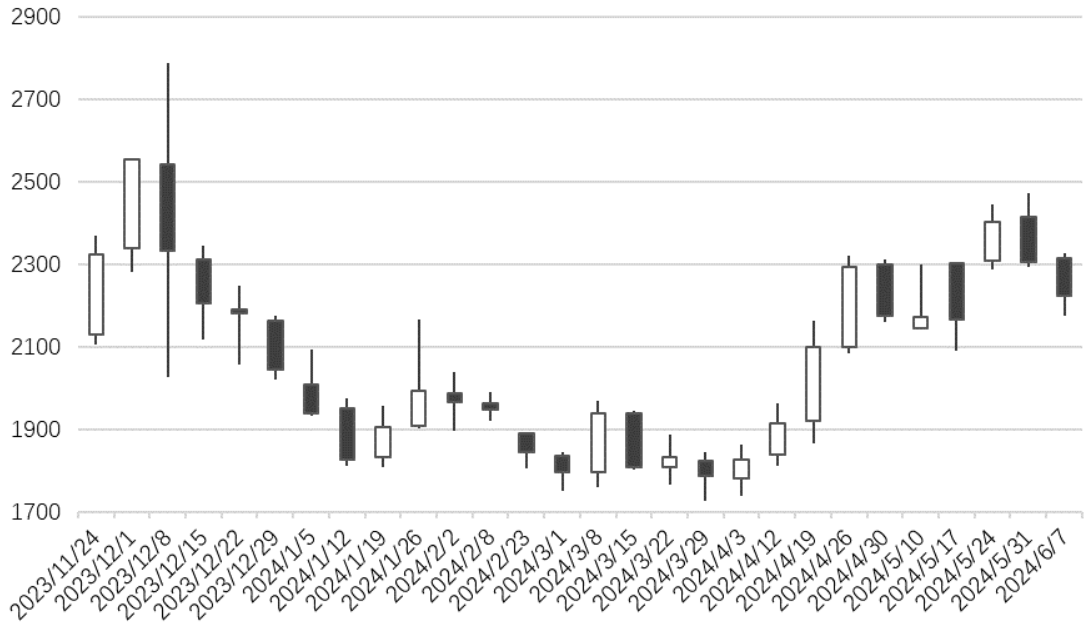

Fig. 1 The weekly candlestick chart of the main continuous contract of soda ash

Egg main continuous contract and iron ore main continuous contract, for example, due to large consumption, market trading liquidity, so in the process of price discovery has a more constant average price standard, based on the idea of regression to the mean, I observed that the egg and iron ore market conditions show a more obvious double-peak structure.

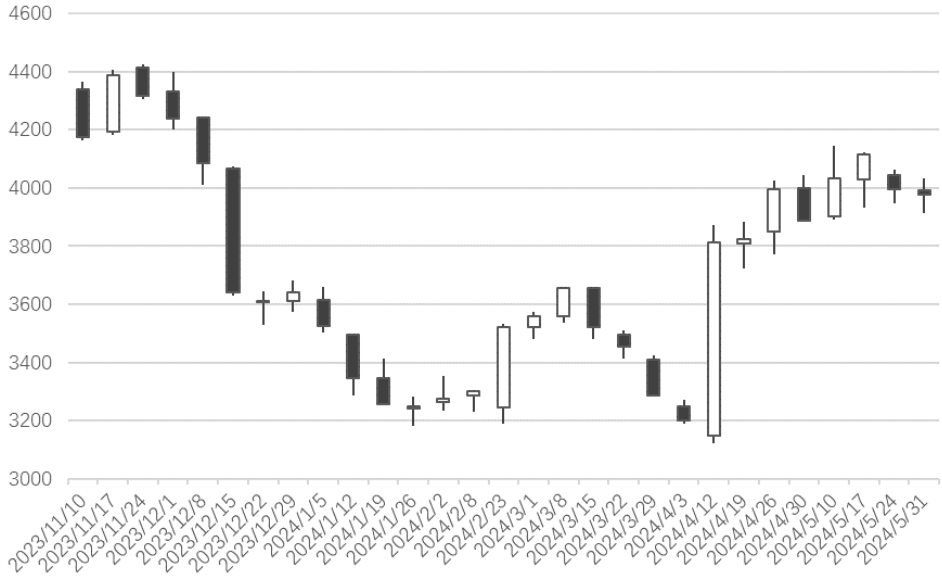

Fig. 2 The Weekly Candlestick Chart of the Main Continuous Contract of Eggs

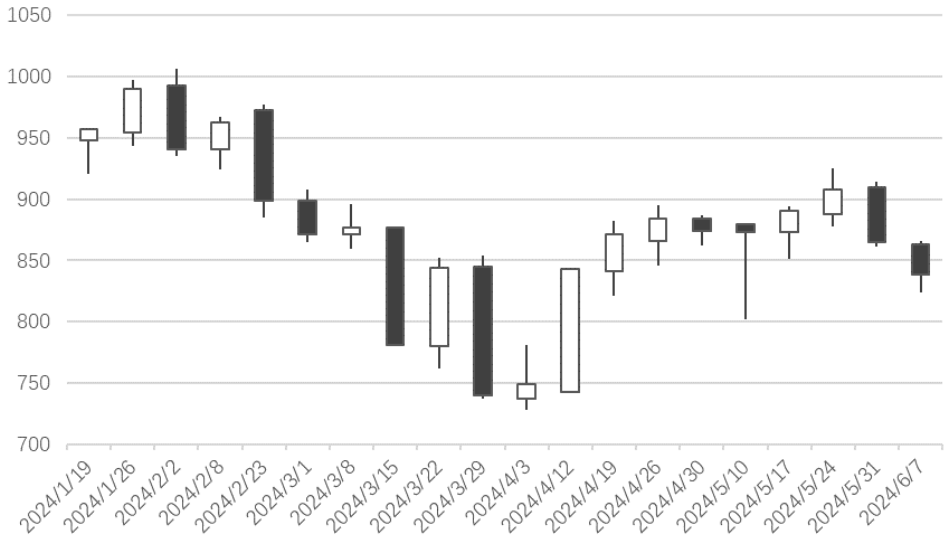

Fig. 3 The weekly candlestick chart of the main continuous contract of Iron ore

Rather than contract prices being driven by particular events in the spot market, the Double peak structure represents price movements based more on the analysis of market sentiment. Because of this, the Double peak structure can be applied to the market for a variety of industry products. This improves the effectiveness of investors' price forecasts and market research considerably, as well as the adaptability and predictability of the regulatory authorities' macro-control policies, which stabilize the mood of the market and effectively safeguard investors' rights and interests in the figure 2 and figure 3.

5.2. Financial Indices

The Double Peak Model was evident for financial indices, like the S&P 500 futures, during major market downturns and financial crises. More buying pressure from institutional and retail investors was blamed for the quick price recovery during short covering.

5.3. Implications for Market Participants

The findings have several implications for market participants: Traders should modify their risk management tactics in light of the possibility of strong price rebounds during short covering. Since regulatory limitations on short selling and covering can affect price dynamics and market stability, policymakers should take this into account. By recognizing times of high short interest and positioning themselves to profit from ensuing price rebounds, investors can take advantage of the Double Peak Model.

6. Discussion

6.1. Theoretical Implications

The Double peak model highlights the unique effects of short selling and covering in futures markets, expanding upon current theories of market dynamics and price discovery. The model first highlights how important market conditions are to price behavior. The magnitude and speed of price changes during short selling and covering are determined by market liquidity and volatility. While less liquid markets might see more abrupt price movements over brief periods of time, more liquid markets might reflect price changes more quickly. Second, the Double peak model emphasizes how crucial the regulatory environment is to price behavior. By striking a balance between price discovery and market stability, a well-crafted regulatory policy can maximize market behavior. Lastly, it is impossible to overlook the part that institutions play in the Double peak model. When prices are backwardation, their participation can hasten the recovery process. All things considered, the Double

peak model offers a novel viewpoint on market dynamics, emphasizing the significance of institutional involvement, regulatory frameworks, and market conditions in influencing pricing behavior.

6.2. Practical Applications

Practical applications of the Double peak model are significant. The model can be used by market participants to forecast market movements, improve risk management, and strengthen trading strategies. In particular, by detecting spikes in short-selling activity, hedge funds and proprietary trading companies can leverage the Double peak model for arbitrage operations. These companies can increase investment returns by optimizing their short selling strategies during the cover period by foreseeing price rallies that follow short sales. Furthermore, in times of market volatility, the Double peak model can assist investors in making more informed financial decisions. Using the Double peak model, investors can anticipate future price rallies and make timely purchases during periods of extreme short selling in the market. As a result, their portfolios perform better overall, and they are able to profit from price rallies.

Understanding the effects of covering and short selling on market stability can help regulators create more effective market regulation laws, which is another advantage of the Double peak model. For instance, suitable limits on short sales can help to stabilize prices and preserve market order during periods of extreme market volatility.

6.3. Limitations and Future Research

Although my research offers valuable insights, it is not without limitations. First off, not all markets and circumstances may be suitable for the Double peak model. The Double peak model's applicability may vary depending on the liquidity, volatility, and regulatory environments of a given market. Thus, it is imperative that forthcoming studies investigate the generalizability of the model to various asset classes such as stocks, bonds, foreign exchange, and commodities. Secondly, this research primarily examines the short- and medium-term price behavior, with minimal examination of the long-term consequences. Future studies should look into how market stability is affected over the long run by short selling and covering, as well as how these actions affect investor behavior, price discovery, and market efficiency. Long-term data analysis can lead to a more thorough understanding of the Double peak model's performance in various market environments.

7. Conclusion

A unique framework for comprehending the price dynamics in futures markets after widespread short selling is provided by the Double Peak Model. My empirical analysis demonstrates the model's relevance in a variety of markets, thereby supporting its validity. This study offers a thorough understanding of the mechanisms underlying price movements during short covering by incorporating insights from recent literature. This model emphasizes the need for sophisticated methods to manage short selling and its effects on the market, which has significant ramifications for investors, traders, and regulators.

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