

# **Gambling and herding in stock markets: Evidence from China**

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## **Abstract**

Standard theories in finance assume that stock market investors only consider the risk and return of their investment portfolio regardless of the type of stocks they invest in. However, empirical evidence does not always agree with theory. For example, investors have loyalty-based portfolio choices, as well as socially responsible and gambling-motivated investment preferences. Among all, gambling-motivated investment preferences attract considerable attention. Prior research has documented that state lotteries and lottery-type securities are substitutes, and they attract similar clienteles. Investors who desire to gamble would find stocks with lottery characteristics appealing. People with high gambling expenditures (e.g. lotteries) are usually associated with great investments in lottery-type stocks. Such gambling-motivated investment decisions in stock markets significantly impact investors and market performance.

Individual investors with lottery preference in the stock market may tilt toward the lottery-type stocks in their portfolios, which may cause the stocks to be overvalued and subsequently underperformed. Lottery preferences may also lead to price destabilisation in stock markets. Such impacts might be even stronger if investors trade the same stocks at approximately the same time. Since a strong co-movement of stock prices can be observed across lottery-type stocks, we expect to see significant herding behaviours among lottery-type stocks. This study aims to identify lottery-like stocks, and to explore whether irrational herding behaviours are present among lottery-like stocks; if yes, where is the ‘alpha’ in lottery-type stocks?

First, I identify lottery-like stocks under prospect theory framework by combining previous measurements. Investors prefer state lottery and lottery-like stocks through which they have a large chance of a small loss but a small chance to earn a high return. Thus, stocks with high idiosyncratic volatility, high idiosyncratic skewness and

low stock price are perceived as lottery-like. Previous works have constructed the LIDX index to rank stocks by capturing how much they share these lottery features. Moreover, a prospect theory value of the historical distribution of the stock monthly returns can be calculated based on cumulative prospect theory. A stock with a high prospect theory value is the one with a high idiosyncratic skewness, which indicates that a stock with high prospect theory value is perceived as lottery-like. The LIDX index failed to capture investors' mental presentation of a stock's past returns, whereas prospect theory value failed to consider the features of attractive gambles, such as low price and high volatility. Second, I test whether investors irrationally herd on such stocks given that lottery-like stocks appeal to investors. Herding behaviours can be detected using a well-established CCK model. I expect to see that herding behaviours among lottery-type stocks are significantly stronger than that among non-lottery stocks. Finally, I explore the asset pricing implications of the irrational behaviours observed. Given that lottery-like stocks, which investors herd on, would earn a subsequent negative return, a new factor based on the irrational behaviours can be constructed by defining as the difference between the strong lottery-like stocks that investors herd on and the non-lottery stocks which investors have not herd on.

Hypotheses are tested with data from the Chinese stock market. The empirical evidence shows that herding behaviour among lottery-type stocks become stronger as the lottery index increases, especially in the up market. This research finds a significant positive alpha when longing the weakest lottery-like stocks and shorting the strongest. We contribute to the academic community by proposing new measurements in identifying lottery-like stocks under prospect theory framework. This paper also has asset pricing implications that benefit stock market investors.